CITY OF MOBILE

PROJECT MANUAL

FOR

MPD TRAFFIC SAFETY UNIT EMERGENCY GENERATOR

850 Virginia Street, Mobile, Alabama 36603

Project No. PD-003-25

BID DOCUMENTS

May 7, 2025

City of Mobile
Architectural Engineering Department
P. O. Box 1827
Mobile, Alabama 36633

CITY OF MOBILE
ARCHITECTURAL ENGINEERING DEPARTMENT

ADDENDUM NO. 01

To:	Prospective Bidders
From:	David M. Cordingly City of Mobile
Date:	May 20, 2025
Re:	**Addendum No. 01** MPD Traffic Safety Unit Emergency Generator City of Mobile Project No.: PD-003-25
BID OPENING DATE:	**Wednesday, May 28, 2025**
BID OPENING TIME:	**2:30 pm local time**
BID OPENING LOCATION:	**Government Plaza – Atrium Lobby** **205 Government Street** **Mobile, Alabama 36602**

This Addendum forms a part of the Contract Documents and modifies the original Bidding Documents dated May 7, 2025, as noted below. The Bidder must acknowledge receipt of this Addendum by statement of receipt indicated on the Proposal Form. Failure to do so may subject bidder to disqualification.

GENERAL CLARIFICATIONS:

1. The only hedges intended for removal are correctly shown on Sheet E3.0 – EXISTING ELECTRICAL PLAN. No other landscaping is to be removed.
2. Pre-Bid Conference Meeting Minutes from May 16, 2025, are attached.
3. Pre-Bid Conference Sign-in sheet is attached.
4. The City of Mobile project number **PD-003-25** is to be included on all documents, communications, etc.

Enclosures:

1. The Pre-Bid Conference Meeting Minutes
2. Attendance Roster, dated May 16, 2025

END OF ADDENDUM

CITY OF MOBILE
ARCHITECTURAL ENGINEERING DEPARTMENT

MPD TRAFFIC SAFETY UNIT – EMERGENCY GENERATOR
MEETING MINUTES

City of Mobile Project No. PD-003-25

PRE-BID CONFERENCE AGENDA
May 16, 2025 at 9:00 a.m. local time

GENERAL INFORMATION

1. Introduction of Attendees
   a. The City of Mobile/Mobile Police Department (CoM) – Owner
      - Representative: David Cordingly – Project Manager
   b. Jaguar Consulting – Consultant
      - Representative: Christina Marie – Electrical Engineer
   c. Dell Consulting – Sub-Consultants
      - Representative: Michael Pruett – Mechanical Engineer

2. Bid Date / Time / Location / Delivery
   Date: May 28, 2025
   Time: 2:15 p.m. local time
   Location: Elevator Lobby outside City Clerk's Office (Receptacle marked "City of Mobile Bids")
   Government Plaza, 9th Floor South Tower
   205 Government Street
   Mobile, Alabama 36602
   Delivery: Bids will be received in a secure drop box located in the elevator lobby outside the Office of the City Clerk's Office. Drop box will be monitored and emptied prior to bid opening. Bidders are strongly encouraged to hand deliver bids to the drop box as FedEx and UPS deliveries may be delayed. Bids will be publicly opened and read at 2:30 PM in the Atrium Lobby of Government Plaza. Additional Bidding instructions are further detailed in the Request for Bids Documents.

3. Eligibility
   a. As per Contract documents
   b. Licensed General Contractor in the State of Alabama
   ~~c. Prequalification was required for **General Contractors**.~~
   ~~d. Prequalified Contractors/Subcontractors~~
      - ~~City of Mobile Master List~~

4. Bids
   a. Preparation/Delivery
      - It is the Contractor's responsibility to make sure bid is complete per the Contract documents (e.g. bid form, bid bond, sub/supplier list, etc.)
      - It is the Contractor's responsibility to make sure bids are delivered and received at the designated location on the date and time stated in advertisement for bid or subsequent addenda.
   b. Proposal Form
      - No alterations shall be made to bid proposal form
      - Be sure to use latest bid proposal form provided during bid process
   c. Guaranty
      - Bid Guaranty in the form of Bid Bond or Cashier's Check is required
      - 5% of bid amount, not to exceed $10,000
      - Use the provided City of Mobile form for Bid Bonds
      - Bid Bond must be executed by a Surety Company duly authorized and qualified to make such bonds in the State of Alabama, payable to the City of Mobile

- Cashier's check, if used, must be drawn on an Alabama bank

d. Sales and Use Tax Savings
   - Bidder is not to add or include Sales and Use taxes in their bids
   - Sales tax estimates should be listed on the space designated on the bid form
   - Contractor will need to apply for a tax-exempt certificate with the Department of Revenue to purchase materials tax free. Any delay in obtaining the tax-exempt certificate due in whole or in part to the Contractor will not be cause for an extension of time for completion of the Project nor an increase in price.
   - Basic material & labor breakdown required to allow City of Mobile to apply for Tax Exempt Certificate

e. Subcontractors and Suppliers Submittal
   - The low bidder shall submit a complete list of major subcontractors and suppliers within 48 hours of the bid opening. This list should include the license number for all subcontractors and should be on the bidder's letterhead.
   - No substitutions of any subcontractor or supplier identified in the listing will be allowed without written request and approval by City of Mobile, whose decision shall be final.

5. Post-Award / Miscellaneous
   a. Contract Bonds as per Section 7 of Instructions to Bidders
      - Performance Bonds - 100% of contract amount
      - Payment Bonds - Not less than 50% of contract amount

   ~~b. Each subcontractor engaged in the installation, modification, configuration, programming, or testing of a fire alarm system must have a current Fire Alarm Permit from the Alabama State Fire Marshal's Office. A copy of each fire alarm subcontractor's permit must be provided with the list of subcontractors prior to installation or modification of the fire alarm system.~~

   c. Bidder awarded the job must show evidence of being registered in the US Government's E-Verify Program
   d. Pay Application requirements as per the General Conditions
   e. Contractor shall adhere to the Child Labor Law - No workers on the project under the age of 18
   f. Minority and Women Owned Participation – City of Mobile is encouraging a goal of 15% for this project. Minority or women owned subcontractors or suppliers should be identified to the Owner using the Subcontracting and Major Supplier Plan form. A directory of DBE Vendors can be found using the ALDOT's Alabama Universal Certification Program (ALUCP) database: https://cpmsapps2.dot.state.al.us/alucp/searchdirectory#targetElement
   g. Davis-Bacon – not applicable.
   h. Smoking, including the use of electronic cigarettes or similar devices, is prohibited anywhere on job site.
   i. Mylar reproducibles are **NOT** required for this project. PDF and AutoCAD files of the complete plan set will still be required.

6. Insurance
   a. Builder's Risk Coverage
      - ~~Is furnished by Owner~~
        - ~~Contractor responsible for $10,000 deductible per occurrence and any claim not covered by the owners builders risk insurance policy – a copy is available upon request~~
        - ~~See Contractor Insurance Requirements for additional information~~
        - ~~See General Conditions Article 28 for additional information related to stored material~~
      - Is not furnished by Owner
        - Owner does not provide insurance coverage or other protection for any financial loss or project delay resulting from damage, theft, or any other loss to tools,

equipment, or materials owned, leased, or rented by the Contractor, employees of the Contractor, or any Subcontractor
    - Contractor may elect to purchase other forms of property insurance or inland marine insurance on tools or equipment, project materials or components awaiting installation at any location or materials or components while being installed

b. General Liability
    - Commercial General Liability coverage with limits of $1,000,000 per occurrence, $1,000,000 aggregate
    - $ 2,000,000.00 in Excess/Umbrella Coverage

c. See the Contract Insurance Requirements section of the bid documents for a complete listing of insurance requirements.

PROJECT INFORMATION

7. Basic Project Information
   The general scope of work is the removal of an existing generator and the procurement and installation of a new 80kw natural gas generator and the associated (2) 200A Nema 3R Service Entrance rated Automatic Transfer Switches.

8. Anticipated Schedule, Progress and Completion
   a. Anticipated "Letter of Intent" from City of Mobile by or before May 30, 2025.
   b. Anticipated NTP / Mobilization: June 4, 2025.
      - No work shall begin on project until insurance certificates are approved by City of Mobile.
   c. Time for Completion
      - Base Bid Completion Date: July 31, 2025.
   d. Liquidated Damages - $250.00 per calendar day for completion dates as specified above, plus additional costs associated with resident observation. No additional cost associated with resident observation for work on weekends or holidays prior to specified completion dates.
   e. Contractor to submit a schedule of values with detailed breakdowns of material and labor within 10 days of the Notice to Proceed for progress tracking and management
   f. Contractor to generate and submit detailed construction progress schedule compliant with Section 3.10 of General Conditions and Specification Section 01 3200 ten (10) days after NTP, unless otherwise indicated in the LOI. No claims for time extensions will be granted prior to the submission and approval of a progress schedule compliant with these sections. During the course of the work, the assigned City of Mobile Project Manager will review the progress of completed work and the submission of any supporting documents regarding the progress of the work.
   g. Owner/Consultant/Contractor (OAC) progress meetings to be held per project requirements
   h. Warranty dates shall start at Date of Substantial Completion

9. Job Sign Requirement - Not required

~~10. Construction Staking~~
   ~~a. Shall be the Contractor's responsibility and shall be performed under the supervision of a Licensed Professional Land Surveyor in the State of Alabama.~~

11. Project Observation / Material Testing
   a. Resident observation will be provided by Owner.
   ~~b. Materials testing and geotechnical recommendations for the Owner will be provided by _____~~
   ~~c. Contractor's responsibility to coordinate all testing.~~
   ~~d. The Contractor shall submit a QA/QC program in compliance with Specification Section 014000.~~

12. Inspections

    Contractor is responsible for ensuring that all inspections are successfully performed in accordance with City of Mobile regulations.24 – 48 hours' notice required.

- 48 – 72 hours' notice required.

b. The Contractor should only schedule inspections when the work to be inspected is complete. reserves the right to deduct costs for additional inspections due to incomplete material or workmanship at the time the Contractor scheduled the initial inspection.

13. Safety
    a. The Contractor shall be responsible for all project safety. Neither the Consultant nor the Owner will be responsible for the Contractor's safety precautions, means, methods, techniques, sequences, or procedures.
    b. Contractor's personnel responsible for safety shall be OSHA certified.
    ~~c. Weekly employee safety meetings will be required with minutes of each meeting kept current. Contractor shall be responsible for coordination, content, scheduling, etc., of safety meetings with employees. Safety meeting minutes with sign in sheets must be current for the contractor's pay request to be approved.~~
    ~~d. The Contractor shall be responsible for maintaining a comprehensive Hot Work Program. See Supplemental General Conditions Section 1.8.~~
    ~~e. Fencing along the limits of construction, including equipment and storage areas, is the Contractor's responsibility unless otherwise directed by the Owner. The cost of any type fencing, barricades, etc. necessary shall be incidental to project. Fencing, barricades, etc., must be maintained according to the project specifications throughout the duration of the project.~~

14. Storm Water and Erosion Control
    a. As per Project Specifications Section 33 2290.
    b. The Contractor shall NOT be responsible for obtaining a NPDES Permit for this project since the disturbed acreage will be less than one (1) acre.
    c. Contractor responsible for implementing all BMP's, installation of all erosion and sedimentation control items, adhering to ADEM, local, and project requirements.

15. Landscape Protection
    a. During the course of the work, Contractor will take all necessary precautions to protect existing trees, shrubs, hedges, etc. on and near the project site as per the Project Specifications
    b. For any landscaping that is destroyed or damaged beyond reasonable repair due in whole or in part to the Contractor's failure to adequately protect it the City of Mobile will assess damages per the Project Specifications

16. Existing Conditions / Constraints

    a. Carefully examine any existing conditions, piping, and premises. Compare drawings with existing conditions. Report any observed discrepancies. It shall be the Contractor's responsibility to properly coordinate the work and to identify problems in a timely manner. Written instructions will be issued by the Engineer to resolve discrepancies

17. .Parking for Contractors, Subcontractors and all workers
    a. T.B.D.

~~18. Traffic Control~~
    ~~a. As per Project Specifications~~
    ~~b. Coordinate all activities which may impede automobile, bus, pedestrian, or bicycle traffic with the Project Manager.~~
    ~~c. No deliveries between 7:30 a.m. and 8:15 a.m.~~

19. Working in the City and interaction with staff and public
    a. The safety of pedestrians and staff around the project site will be emphasized throughout the project. Safe pedestrian routing will be established in conjunction with the City of Mobile Project Manager Contractor will maintain such routing throughout the duration of the project.

b. Notification to Emergency Vehicles (Police, Fire, Rescue, Ambulance, etc.) shall be Contractor's responsibility
c. Harassing communications or behavior toward pedestrians or staff will not be tolerated and offending individuals will be removed from the project immediately.
d. Unless otherwise indicated, Contractor shall provide temporary toilet facilities for its employees as well as other workers on the jobsite. Workers on the jobsite shall not use restrooms, break areas, or vending machines within the building or adjacent buildings unless approved by City of Mobile.

20. Existing Utilities
    a. As per Technical Specifications Section 02 2102.
    b. Verify location of utilities prior to construction – Contractor's responsibility. Existing utilities not identified to be relocated shall be protected by the contractor.

ADDENDA, ALLOWANCES, ALTERNATES & UNIT PRICES

21. Addenda
    a. Minutes of Pre-Bid and any other pertinent items discussed shall be issued as Addendum 1
    b. Additional addenda will be issued throughout bid process as warranted electronically by email, including any drawing or specification revisions.
    c. All questions prior to bid should be directed to **Christina Marie at christy@dellconsulting.com** and **David Cordingly at david.cordingly@cityofmobile.com**.
    d. Deadline for questions from bidders: May 21, 2025 by 12:00 p.m. local time.
    e. Deadline for substitution requests: May 21, 2025 by 12:00 p.m. local time.
    f. All questions should be directed to Engineer of Record in writing. Responses will be sent to all bidders. Any pertinent questions that may be asked during site walk-through or site visits should be followed up in writing. Any verbal answers provided should be considered nonbinding.

22. Allowances
    a. Refer to Specification Section 01 2005, ALLOWANCES, for specific details.

23. Alternates
    a. As an add alternate the electrical contractor shall provide a cost to remove the existing switchboard and provide and install a new 400A (200A main circuit breaker) 208Y/120-volt panel to replace the switchboard. The cost is to include all work associated with the removal of the existing equipment, installation of new equipment and the reconnection of all existing loads to remain.

24. Unit Prices - None

25. Other / Miscellaneous - None

OWNER COMMENTS

QUESTIONS / COMMENTS

PROJECT TOUR (OPTIONAL)

MOBILE ALABAMA
ARCHITECTURAL ENGINEERING

PRE-BID CONFERENCE ATTENDANCE ROSTER

PROJECT NAME	PROJECT LOCATION	DATE
MPD TRAFFIC SAFETY UNIT **EMERGENCY GENERATOR** City of Mobile Project No. **PD-003-25**	850 Virginia Street Mobile, Alabama 36603	Friday, May 16, 2025

NAME	ORGANIZATION	DBE	PHONE	EMAIL
David Cordingly	City of Mobile Architectural Engineering		(251) 802-2436	david.cordingly@cityofmobile.org
Stevie Clark	City of Mobile Facilities Maintenance		(251) 208-1572	steve.clark@cityofmobile.org
Christina Marie	Jaguar & Dell Consulting		(251) 307-1037	christy@dellconsultingllc.com
Tim Forget	Bill Smith Electric		(251) 349-5724	Tim@billsmithelectric.com
T. Jackson	Jackson Construction and Plumbing, LLC		(251) 529-0303	Jacksoncpllc@gmail.com

CITY OF MOBILE
ARCHITECTURAL ENGINEERING DEPARTMENT

ADDENDUM NO. 02

To:	Prospective Bidders
From:	David M. Cordingly City of Mobile
Date:	May 27, 2025
Re:	**Addendum No. 02** MPD Traffic Safety Unit Emergency Generator City of Mobile Project No.: PD-003-25
BID OPENING TIME & DATE:	**Wednesday, May 28, 2025, at 2:30pm local time**
BID OPENING LOCATION:	**Government Plaza – Atrium Lobby** **205 Government Street** **Mobile, Alabama 36602**

This Addendum forms a part of the Contract Documents and modifies the original Bidding Documents dated May 7, 2025, as noted below. The Bidder must acknowledge receipt of this Addendum by statement of receipt indicated on the Proposal Form. Failure to do so may subject bidder to disqualification.

This Addendum to the Bid Documents includes the following:

I. **GENERAL / CLARIFICATIONS:**
1. It has been brought to my attention that the current Bid Form within the Project Manual has the incorrect project name and number in the document's header.
2. It has been brought to my attention that the Accounting of Sales Tax Form was not originally included in the Project Manual.

II. **SPECIFICATIONS:**
1. Replace Section 00 1100 - Invitation to Bid in the Project Specifications with the attached "Invitation to Bid" in its entirety.
2. Replace Section 00 4100 - Bid Proposal Form in the Project Specifications with the attached "Bid Proposal Form" in its entirety.
3. Added Section 00 4200 - Accounting of Sales Tax Form in the Project Specifications with the attached "Accounting of Sales Tax Form".

III. **DRAWINGS:**
1. No changes

IV. **REQUEST FOR INFORMATION:**
1. No changes

V. **ATTACHMENTS:**
A. Specifications
Section 00 1100 – Invitation to Bid
Section 00 4100 – Bid Proposal Form
Section 00 4200 – Accounting of Sales Tax Attachment to Bid Form

END OF ADDENDUM

SECTION 00 1116 - INVITATION TO BID

PART 1 - GENERAL

You are invited to submit a sealed bid for construction of the following facility:

PROJECT NAME:	**MPD TRAFFIC SAFETY UNIT – EMERGENCY GENERATOR**
PROJECT LOCATION:	**850 Virginia Street, Mobile, Alabama 36603**
PROJECT NUMBER:	**PD-003-25**

1. BID DATE:
   A. Sealed Bids will be received and clocked in until **2:15 PM** local time, **Wednesday, the 28th day of May, 2025**. Bidders shall insert sealed Bids into a receptacle marked "City of Mobile Bids", located in the elevator lobby outside the City Clerk Office, 9th Floor South Tower, Government Plaza, 205 Government Street, Mobile, Alabama 36602.
   B. All Bids not clocked in at the City Clerk's Office prior to the time specified, or Bids received after the specified time, will be automatically rejected and returned immediately, unopened.
   C. Bids will be publicly opened and read at **2:30 PM** local time, in the Atrium Lobby of Government Plaza.
2. SPECIFICATIONS AND DRAWINGS:
   A. Specifications and Drawings are on file and may be examined at the following location:
      a. City of Mobile Bids Website: **https://www.cityofmobile.org/bids**
   B. Contractor may contact Jaguar Consulting or City of Mobile Project Manager for access to record drawings, if available. See Section 01 10000 – SUMMARY OF WORK for Project Contact Information.
   C. Bidder shall use complete sets of Bid Documents in preparing their Bid. Neither the Owner nor Architect/Engineer assumes responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bid Documents.
   D. Addenda will be issued via e-mail to all Prospective Bidders who attended the Pre-Bid Conference.
   E. Product Substitutions must be pre-approved before the Bid Date (see Section 01 6300 for requirements)
   F. **This is a tax-exempt project. Bidders shall NOT include sales and use taxes with their bid amounts.**
3. BID SURETY: Required on Bids $50,000.00 or more
   A. A Cashier's Check drawn on a bank registered to do business in the State of Alabama and which is a member of the Federal Deposit Insurance Corporation, or a Bid Bond payable to Owner, City of Mobile, in the amount of 5% of the Base Bid, but in no event more than $10,000.00 is required to accompany Bid.

B. Bid Bond must be issued by a Surety licensed to do business in the State of Alabama. Bidder shall require the attorney in fact who executes the required bonds on behalf of the surety to affix to the bond a certified and current copy of the power of attorney.

C. No Bid may be modified, withdrawn, or canceled for a period of sixty (60) days after the time designated above for receipt of bids.

D. The City of Mobile will have sixty (60) days from the bid opening date to award contract.

4. SURETY QUALIFICATIONS:

A. A Surety authorized to do business in the State of Alabama must issue Bonds.

B. If the Base Bid is $50,000 or more, the Surety must have a minimum rating of A/Class VI as reported by the latest issue of Best Key Rating Guide Property-Casualty published by Alfred M. Best Company, Inc.

5. IRREGULARITIES AND REJECTION:

A. The City of Mobile reserves the right to waive irregularities in the Bid and in Bidding, and to reject any or all Bids.

6. BIDDER QUALIFICATIONS:

A. Bids for Work costing $50,000 or more must be licensed pursuant to current Alabama law and of classifications compliant with the State of Alabama Licensing Board for General Contractors. Note that if the contract amount is $10,000 or greater, both a Performance Bond and a Labor and Material Payment Bond shall be required. **Before Bidding, Contractor shall verify their license classification of their General Contractors license with the State of Alabama Licensing Board for General Contractors to verify classification is acceptable to perform 51% of the Scope of Work**.

7. NON-RESIDENT CONTRACTORS:

A. Except for contracts funded in whole or part with funds received from a federal agency, preference shall be given to resident Contractors on the same basis as the nonresident Contractor's state awards contracts to Alabama Contractors bidding in similar circumstances.

B. Nonresident Bidders shall, prior to submitting a bid, be registered with the Alabama Secretary of State and the Alabama Department of Revenue. Provide the Secretary of State Business "Entity ID Number" on the Bid Form in the space provided.

8. PRE-BID CONFERENCE:

A. A **Pre-Bid Conference** for General Contractors will be held in the back parking lot behind the **Mobile Police Department Traffic Safety Unit, located at 850 Virgina Street, Mobile, AL 36603 at 9:00 AM local time Friday, May 16, 2025,** and continue on to the job site.

B. Minutes of this conference will be sent out as Addition Information for the project.

9. BID SUBMITTAL:

A. Bids must be submitted on copies of the Bid Forms furnished in the Bidding Documents.

B. Bid, with Bid Security, Sales Tax Form C-3A and other supporting data specified, shall be contained in a sealed, opaque envelope, approximately 9x12 inches or larger and be marked on the outside with the words **"SEALED BID FOR MPD TRAFFIC SAFETY UNIT - EMERGENCY GENERATOR, PROJECT NUMBER: PD-003-25".**

C. The Bid envelope shall be clearly addressed to the Owner as indicated on the Bid Form and include the bid date, the name, address and State License number and classification of the Bidder issued by the State of Alabama Licensing Board for General Contractors.

D. All Bids of $50,000 or more must include the Bidder's State of Alabama General Contractor's License information written on the outside of the bid envelope. Any Bid submitted without such license information may be rejected and returned to the Bidder unopened.

E. In addition, in large letters on both front and back of envelope, write the following: **DO NOT OPEN UNTIL TWO-THIRTY PM, MAY 28, 2025**.

F. For a Bid to be valid it shall be delivered at designated location prior to time and date for receipt of Bids indicated in INVITATION TO BID, or prior to any extension thereof issued to Bidders. After that time no Bid will be received or withdrawn.

G. When sent by mail, preferably special delivery, express service, or registered mail, the sealed Bid, marked as indicated above, shall be enclosed in another envelope for mailing such that the exterior mailing container or envelope may be opened without revealing the contents of the Bid. It is the Contractors responsibility to assure delivery of the bid to the City Clerk's Office prior the time and date established.

10. EQUAL OPPORTUNITY:

A. The City of Mobile, Alabama is an Equal Opportunity Employer and requires that all Contractors comply with the Equal Employment Opportunity laws and the provisions of the Bid Documents in this regard.

B. The City of Mobile also encourages and supports the utilization of Minority Business Enterprises on these and all other publicly solicited Bids, and shall be in compliance with the City of Mobile's Minority Utilization Plan as adopted by the City Council.

C. **All Bid Forms must include an appropriately completed "City of Mobile Subcontracting and Major Supplier Plan" in the envelope with their Bid Form per requirements.** Form shall document DBE Subcontractors participating in the project and, should the total % of DBE participation not meet the 15% minimum, all efforts to obtain DBE Subcontractors shall be documented on or attached to the DBE Form when submitted. During construction, contractors are required to submit a "DBE Utilization Report" with every Pay Application.

D. Contractors should contact the City of Mobile Supplier Diversity Manager for assistance with DBE Subcontractor information and any questions regarding the DBE Compliance Forms. Contact Archnique Kidd at 251-208-7967 or archnique.kidd@cityofmobile.org.

E. A Directory of DBE Vendors can be found at ALDOT's Alabama Universal Certification Program (ALUCP) database:

https://cpmsapps2.dot.state.al.us/alucp/searchdirectory#targetElement

11. ADDITIONAL BIDDING PROCEDURES:

A. Refer to the complete information in the Bid Documents prior to submitting a bid. Additional Bidding Procedure information is contained therein, particularly in the specification Section 00 2100 "Instructions to Bidders - AIA Document A701" and in the specification Section 00 2200 "Supplementary Instructions to Bidders".

12. STATE OF ALABAMA IMMIGRATION ACT

"The State of Alabama, under the Beason-Hammon Alabama Taxpayer and Citizen Protection Act, Act No. 2011-535, Alabama Code Section 31-13-1, et. Seq., requires:

A. That the Contractor shall be enrolled in the E-Verify Program, shall participate in that Program during the performance of the contract, and shall verify the immigration status of every employee who is required to be verified, according to the applicable federal rules and regulations; and

B. That it will attach to the contract the company's documentation of enrollment in E-Verify.

C. The Subcontractor must also enroll in the E-Verify Program prior to performing any work on the contract and shall attach to its sworn affidavit documentation establishing that the Subcontractor is enrolled in the E-Verify Program.

13. PUBLIC CONTRACTS WITH ENTITIES ENGAGING IN CERTAIN BOYCOTT ACTIVITIES

A. By signing this contract, Contractor further represents and agrees that it is not currently engaged in, nor will it engage in, any boycott of a person or entity based in or doing business with a jurisdiction with which the State of Alabama can enjoy open trade.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 1116

SECTION 00 4100 - BID FORM

Copies of the following Bid Forms shall be used. Bids submitted on alternate forms may be rejected. Fill in all blank spaces with an appropriate entry. Bid Form must be signed by an officer of the company and notarized.

TO: City of Mobile, 205 Government St., P.O. Box 1827, Mobile, AL, 36633

REF:	**PROJECT NO.:**	**PD-003-25**
	PROJECT NAME:	**MPD TRAFFIC SAFETY UNIT EMERGENCY GENERATOR**
	PROJECT LOCATION:	**850 Virginia Street Mobile, Alabama 36603**

In compliance with the Bid Documents and having carefully and thoroughly examined said documents for the subject Work prepared by the City of Mobile, Architectural Engineering Department dated May 7, 2025; and all Addendum (a) Number(s) _____, dated_____, 2025 (CAUTION: before submitting any bid it is the Bidder's responsibility to check with the Architectural Engineering Department for all Addenda or special instructions that may impact the Bid) thereto, receipt of which is hereby acknowledged, the premises and all conditions affecting the Work prior to making this Proposal, the Undersigned Bidder, hereby

COMPANY NAME: _____

ADDRESS: _____ PHONE: _____

ALABAMA GENERAL CONTRACTOR LICENSE NO. _____

CITY OF MOBILE BUSINESS LICENSE NO. _____

SECRETARY OF STATE OF ALABAMA BUSINESS IDENTITY NO. _____

SECRETARY OF STATE OF ALABAMA ACCOUNT NO. _____

(Note: Secretary of State Account Number shall be filled in only by non-resident bidders)

(Check one) [ ] A Corporation [ ] A Partnership [ ] An Individual Doing Business

hereby proposes to furnish all labor, materials, tools, equipment, and supplies and to sustain all the expenses incurred in performing the Work on the above captioned Project in accordance with the terms of the Contract Documents, and all applicable laws and regulations for the sum listed below. The initial term of the Contract shall extend for Sixty (60) calendar days from the date of the Notice to Proceed.

The Bidder further declares that he is aware of the tax exempt status of the Owner and that sales/use/severance taxes are **excluded** from the amount of the bid.

BID

Base Bid: _____ .00

Contingency Allowance: $ 10,000.00

Total Bid (Base Bid + Allowance): _____ .00
(Amount in Figures)

_____ and no/100 dollars
(Amount in Words)

ALTERNATES (See Section 01 2300 – Alternates)

ALTERNATE NO. 1: Remove & Replace the Existing Switchboard Panel.

_____ Dollars
(Amount in Words)

($ _____ .00)
(Amount in Figures)

(Note: Show amount in both words and figures. In case of discrepancy, the amount in words shall govern). **Bids shall be provided in whole dollar amount with no cents.**

REQUIRED LISTING OF SUBCONTRACTORS/SUPPLIERS: List the subcontractors/suppliers for the trades listed below which you intend to use for the base bid. If no trades are designated, the listing is not required. List yourself for work you intend to self-perform. Any envelope adjustments to this section must be initiated by the bidder. Failure to complete this section may render your bid non-responsive. See Supplemental Instructions to Bidders for additional information.

(List requested trades here, if any)

BID SECURITY: The undersigned Bidder agrees that the attached Bid Security, as a Cashier's Check drawn on a bank registered to do business in the State of Alabama and which is a member of the Federal Deposit Insurance Corporation, or a Bid Bond, made payable to the City of Mobile, in the amount of 5% of the bid amount, but in no event more than $10,000, as the proper measure of liquidated damages which the City will sustain by the failure of the undersigned to execute the Contract. Said Bid Security shall become the property of the City of Mobile as liquidated damages as specified in the Contract Documents.

AMERICANS WITH DISABILITIES ACT (ADA): The undersigned Bidder agrees to fully comply with all requirements of the Americans with Disabilities Act of 2010 and the Amendment Act.

NONDISCRIMINATION: Contractor shall comply with all Federal, State and local laws concerning nondiscrimination, including but not limited to City of Mobile Ordinance No. 14-034 which requires, inter alia, that all contractors performing work for the City of Mobile not

discriminate on the basis of race, creed, color, national origin or disability, require that all subcontractors they engage do the same, and make every reasonable effort to assure that fifteen percent of the work performed under contract be awarded to socially and economically disadvantaged individuals and business entities.

SIGNATURE: If the undersigned Bidder is incorporated, the entire legal title of the company followed by "a corporation" should be used. If Bidder is an individual, then that individual's full legal name followed by doing business as (d/b/a) and name of firm, if any, should be used. If Bidder is a partnership, then the full name of each partner should be listed followed by "d/b/a" and name of firm, if any.

Ensure that name and exact arrangement thereof is the same on all forms submitted with this Bid. If a word is abbreviated in the official company name, such as "Co.", then use that abbreviation. If not abbreviated in the official name, spell out.

Bidder agrees not to revoke or withdraw this Bid until sixty (60) calendar days following the time and date for receipt of bids. If notified in writing of the acceptance of this Bid within this time period, Bidder agrees to execute a Contract based on this Bid on the proscribed form within ten (10) calendar days of said notification and to furnish Performance Bond and Materials and Payment Bond as specified.

COMPANY NAME: _____
(Printed or Typed)

BY: _____
(Signature of Company Officer)

COMPANY OFFICER: _____
(Printed or Typed)

TITLE: _____ **DATE:** _____, 2025
(Printed or Typed)

Sworn to and subscribed before me this _____ day of _____, 2025

_____
Notary Public

Attachments:

1. Bid Security, with Power of Attorney
2. Secretary of State Authorization (Out of state bidders only)
3. Sales Tax Form C-3A
4. City of Mobile Subcontractor and Major Supplier Plan

END OF BID FORM

SECTION 00 4200 - ACCOUNTING OF SALES TAX ATTACHMENT TO BID FORM
SALES TAX FORM C-3A

To: City of Mobile **Date:** _____

Name of Project: MPD TRAFFIC SAFETY UNIT – EMERGENCY GENERATOR
Project Number: PD-003-25

SALES TAX ACCOUNTING

Pursuant to Act 2013-205, Section 1(g) the Contractor accounts for the sales tax NOT included in the bid proposal form as follows:

	ESTIMATED SALES TAX AMOUNT
BASE BID:	$_____
ADD ALT. #1:	$_____

Failure to provide an accounting of sales tax shall render the bid non-responsive. Other than determining responsiveness, sales tax accounting shall not affect the bid pricing nor be considered in the determination of the lowest responsible and responsive bidder.

Legal Name of Bidder: _____

Mailing Address: _____

***By (Legal Signature):** _____

***Name (type or print):** _____ (Seal)

***Title:** _____

Telephone Number: _____

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CITY OF MOBILE
MPD TRAFFIC SAFETY UNIT
EMERGENCY GENERATOR

PROJECT NO. PD-003-25

BIDDING REQUIREMENTS AND FORMS

SECTION 00 1116 - INVITATION TO BID

PART 1 - GENERAL

You are invited to submit a sealed bid for construction of the following facility:

PROJECT NAME:	**MPD TRAFFIC SAFETY UNIT – EMERGENCY GENERATOR**
PROJECT LOCATION:	**850 Virginia Street, Mobile, Alabama 36603**
PROJECT NUMBER:	**PD-003-25**

1. BID DATE:
   A. Sealed Bids will be received and clocked in until **2:15 PM** local time, **Wednesday, the 28th day of May, 2025**. Bidders shall insert sealed Bids into a receptacle marked "City of Mobile Bids", located in the elevator lobby outside the City Clerk Office, 9th Floor South Tower, Government Plaza, 205 Government Street, Mobile, Alabama 36602.
   B. All Bids not clocked in at the City Clerk's Office prior to the time specified, or Bids received after the specified time, will be automatically rejected and returned immediately, unopened.
   C. Bids will be publicly opened and read at **2:30 PM** local time, in the Atrium Lobby of Government Plaza.
2. SPECIFICATIONS AND DRAWINGS:
   A. Specifications and Drawings are on file and may be examined at the following location:
      a. City of Mobile Bids Website: **https://www.cityofmobile.org/bids**
   B. Contractor may contact Jaguar Consulting or City of Mobile Project Manager for access to record drawings, if available. See Section 01 10000 – SUMMARY OF WORK for Project Contact Information.
   C. Bidder shall use complete sets of Bid Documents in preparing their Bid. Neither the Owner nor Architect/Engineer assumes responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bid Documents.
   D. Addenda will be issued via e-mail to all Prospective Bidders who attended the Pre-Bid Conference.
   E. Product Substitutions must be pre-approved before the Bid Date (see Section 01 6300 for requirements)
   F. **This is a tax-exempt project. Bidders shall NOT include sales and use taxes with their bid amounts.**
3. BID SURETY: Required on Bids $50,000.00 or more
   A. A Cashier's Check drawn on a bank registered to do business in the State of Alabama and which is a member of the Federal Deposit Insurance Corporation, or a Bid Bond payable to Owner, City of Mobile, in the amount of 5% of the Base Bid, but in no event more than $10,000.00 is required to accompany Bid.

B. Bid Bond must be issued by a Surety licensed to do business in the State of Alabama. Bidder shall require the attorney in fact who executes the required bonds on behalf of the surety to affix to the bond a certified and current copy of the power of attorney.

C. No Bid may be modified, withdrawn, or canceled for a period of sixty (60) days after the time designated above for receipt of bids.

D. The City of Mobile will have sixty (60) days from the bid opening date to award contract.

4. SURETY QUALIFICATIONS:

A. A Surety authorized to do business in the State of Alabama must issue Bonds.

B. If the Base Bid is $50,000 or more, the Surety must have a minimum rating of A/Class VI as reported by the latest issue of Best Key Rating Guide Property-Casualty published by Alfred M. Best Company, Inc.

5. IRREGULARITIES AND REJECTION:

A. The City of Mobile reserves the right to waive irregularities in the Bid and in Bidding, and to reject any or all Bids.

6. BIDDER QUALIFICATIONS:

A. Bids for Work costing $50,000 or more must be licensed pursuant to current Alabama law and of classifications compliant with the State of Alabama Licensing Board for General Contractors. Note that if the contract amount is $10,000 or greater, both a Performance Bond and a Labor and Material Payment Bond shall be required. **Before Bidding, Contractor shall verify their license classification of their General Contractors license with the State of Alabama Licensing Board for General Contractors to verify classification is acceptable to perform 51% of the Scope of Work**.

7. NON-RESIDENT CONTRACTORS:

A. Except for contracts funded in whole or part with funds received from a federal agency, preference shall be given to resident Contractors on the same basis as the nonresident Contractor's state awards contracts to Alabama Contractors bidding in similar circumstances.

B. Nonresident Bidders shall, prior to submitting a bid, be registered with the Alabama Secretary of State and the Alabama Department of Revenue. Provide the Secretary of State Business "Entity ID Number" on the Bid Form in the space provided.

8. PRE-BID CONFERENCE:

A. A **Pre-Bid Conference** for General Contractors will be held in the back parking lot behind the **Mobile Police Department Traffic Safety Unit, located at 850 Virgina Street, Mobile, AL 36603 at 9:00 AM local time Friday, May 16, 2025,** and continue on to the job site.

B. Minutes of this conference will be sent out as Addition Information for the project.

9. BID SUBMITTAL:

A. Bids must be submitted on copies of the Bid Forms furnished in the Bidding Documents.

B. Bid, with Bid Security, Sales Tax Form C-3A and other supporting data specified, shall be contained in a sealed, opaque envelope, approximately 9x12 inches or larger and be marked on the outside with the words **"SEALED BID FOR MPD TRAFFIC SAFETY UNIT - EMERGENCY GENERATOR, PROJECT NUMBER: PD-003-25".**

C. The Bid envelope shall be clearly addressed to the Owner as indicated on the Bid Form and include the bid date, the name, address and State License number and classification of the Bidder issued by the State of Alabama Licensing Board for General Contractors.

D. All Bids of $50,000 or more must include the Bidder's State of Alabama General Contractor's License information written on the outside of the bid envelope. Any Bid submitted without such license information may be rejected and returned to the Bidder unopened.

E. In addition, in large letters on both front and back of envelope, write the following: **DO NOT OPEN UNTIL TWO-THIRTY PM, MAY 28, 2025**.

F. For a Bid to be valid it shall be delivered at designated location prior to time and date for receipt of Bids indicated in INVITATION TO BID, or prior to any extension thereof issued to Bidders. After that time no Bid will be received or withdrawn.

G. When sent by mail, preferably special delivery, express service, or registered mail, the sealed Bid, marked as indicated above, shall be enclosed in another envelope for mailing such that the exterior mailing container or envelope may be opened without revealing the contents of the Bid. It is the Contractors responsibility to assure delivery of the bid to the City Clerk's Office prior the time and date established.

10. EQUAL OPPORTUNITY:

A. The City of Mobile, Alabama is an Equal Opportunity Employer and requires that all Contractors comply with the Equal Employment Opportunity laws and the provisions of the Bid Documents in this regard.

B. The City of Mobile also encourages and supports the utilization of Minority Business Enterprises on these and all other publicly solicited Bids, and shall be in compliance with the City of Mobile's Minority Utilization Plan as adopted by the City Council.

C. **All Bid Forms must include an appropriately completed "City of Mobile Subcontracting and Major Supplier Plan" in the envelope with their Bid Form per requirements.** Form shall document DBE Subcontractors participating in the project and, should the total % of DBE participation not meet the 15% minimum, all efforts to obtain DBE Subcontractors shall be documented on or attached to the DBE Form when submitted. During construction, contractors are required to submit a "DBE Utilization Report" with every Pay Application.

D. Contractors should contact the City of Mobile Supplier Diversity Manager for assistance with DBE Subcontractor information and any questions regarding the DBE Compliance Forms. Contact Archnique Kidd at 251-208-7967 or archnique.kidd@cityofmobile.org.

E. A Directory of DBE Vendors can be found at ALDOT's Alabama Universal Certification Program (ALUCP) database:

https://cpmsapps2.dot.state.al.us/alucp/searchdirectory#targetElement

11. ADDITIONAL BIDDING PROCEDURES:

A. Refer to the complete information in the Bid Documents prior to submitting a bid. Additional Bidding Procedure information is contained therein, particularly in the specification Section 00 2100 "Instructions to Bidders - AIA Document A701" and in the specification Section 00 2200 "Supplementary Instructions to Bidders".

12. STATE OF ALABAMA IMMIGRATION ACT

"The State of Alabama, under the Beason-Hammon Alabama Taxpayer and Citizen Protection Act, Act No. 2011-535, Alabama Code Section 31-13-1, et. Seq., requires:

A. That the Contractor shall be enrolled in the E-Verify Program, shall participate in that Program during the performance of the contract, and shall verify the immigration status of every employee who is required to be verified, according to the applicable federal rules and regulations; and

B. That it will attach to the contract the company's documentation of enrollment in E-Verify.

C. The Subcontractor must also enroll in the E-Verify Program prior to performing any work on the contract and shall attach to its sworn affidavit documentation establishing that the Subcontractor is enrolled in the E-Verify Program.

13. PUBLIC CONTRACTS WITH ENTITIES ENGAGING IN CERTAIN BOYCOTT ACTIVITIES

A. By signing this contract, Contractor further represents and agrees that it is not currently engaged in, nor will it engage in, any boycott of a person or entity based in or doing business with a jurisdiction with which the State of Alabama can enjoy open trade.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 1116

SECTION 00 2100 - INSTRUCTIONS TO BIDDERS

PART 1 – GENERAL

This section includes the INSTRUCTIONS TO BIDDERS, AIA Document A701-2018 to be utilized with the Owner's most recent modifications and which shall be used in conjunction with the entire Bid Documents and Section 00 2200 SUPPLEMENTARY INSTRUCTIONS TO BIDDERS for this project.

DRAFT

AIA® Document A701™ – 2018

Instructions to Bidders

for the following Project:
(Name, location, and detailed description)

«MPD TRAFFIC SAFETY UNIT – EMERGENCY GENERATOR »
«850 Virginia Street »
«Mobile, Alabama 36603 »
«Project No. PD-003-25 »

THE OWNER:
(Name, legal status, address, and other information)

«CITY OF MOBILE »
«P.O. Box 1827»
«Mobile, Alabama 36633-1827 »
«Contact: David M. Cordingly »

THE ENGINEER:
(Name, legal status, address, and other information)

«JAGUAR CONSULTING, LLC »
«8658 Capital Drive North »
«Mobile, Alabama 36695»
«Contact: Christina Marie »

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ADDITIONS AND DELETIONS:
The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

FEDERAL, STATE, AND LOCAL LAWS MAY IMPOSE REQUIREMENTS ON PUBLIC PROCUREMENT CONTRACTS. CONSULT LOCAL AUTHORITIES OR AN ATTORNEY TO VERIFY REQUIREMENTS APPLICABLE TO THIS PROCUREMENT BEFORE COMPLETING THIS FORM.

It is intended that AIA Document G612™–2017, Owner's Instructions to the Architect, Parts A and B will be completed prior to using this document.

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ARTICLE 1 DEFINITIONS

§ 1.1 Bidding Documents include the Bidding Requirements and the Proposed Contract Documents. The Bidding Requirements consist of the advertisement or invitation to bid, Instructions to Bidders, supplementary instructions to bidders, the bid form, and any other bidding forms. The Proposed Contract Documents consist of the unexecuted form of Agreement between the Owner and Contractor and that Agreement's Exhibits, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, all Addenda, and all other documents enumerated in Article 8 of these Instructions.

§ 1.2 Definitions set forth in the General Conditions of the Contract for Construction, or in other Proposed Contract Documents apply to the Bidding Documents.

§ 1.3 Addenda are written or graphic instruments issued by the Architect, which, by additions, deletions, clarifications, or corrections, modify or interpret the Bidding Documents.

§ 1.4 A Bid is a complete and properly executed proposal to do the Work for the sums stipulated therein, submitted in accordance with the Bidding Documents.

§ 1.5 The Base Bid is the sum stated in the Bid for which the Bidder offers to perform the Work described in the Bidding Documents, to which Work may be added or deleted by sums stated in Alternate Bids.

§ 1.6 An Alternate Bid (or Alternate) is an amount stated in the Bid to be added to or deducted from, or that does not change, the Base Bid if the corresponding change in the Work, as described in the Bidding Documents, is accepted.

§ 1.7 A Unit Price is an amount stated in the Bid as a price per unit of measurement for materials, equipment, or services, or a portion of the Work, as described in the Bidding Documents.

§ 1.8 A Bidder is a person or entity who submits a Bid and who meets the requirements set forth in the Bidding Documents. A Bidder must be licensed by the State Licensing Board for General Contractors if the amount for the Contract exceeds the amount established by said Board.

§ 1.9 A Sub-bidder is a person or entity who submits a bid to a Bidder for materials, equipment, or labor for a portion of the Work. A Sub-bidder performing Work must be licensed by the State Licensing Board for General Contractors if the Sub-bidders' contract amount exceeds that established by said Board.

§ 1.10 A non-resident Bidder or Sub-bidder is one who

a. Is neither organized nor existing under the laws of the State of Alabama
b. nor maintains its principal place of business in the State of Alabama.

A non-resident contractor who has maintained a permanent branch office within the State of Alabama for at least five (5) continuous years shall not thereafter be deemed to be a non-resident contractor so long as such contractor continues to maintain a branch office within Alabama.

ARTICLE 2 BIDDER'S REPRESENTATIONS

§ 2.1 By submitting a Bid, the Bidder represents that:

.1 the Bidder has read and understands the Bidding Documents;

.2 the Bidder understands how the Bidding Documents relate to other portions of the Project, if any, being bid concurrently or presently under construction;

.3 the Bid complies with the Bidding Documents;

.4 the Bidder has visited the site, become familiar with local conditions under which the Work is to be performed, and has correlated the Bidder's observations with the requirements of the Proposed Contract Documents;

.5 the Bid is based upon the materials, equipment, and systems required by the Bidding Documents without exception; and

.6 the Bidder has read and understands the provisions for liquidated damages, if any, set forth in the form of Agreement between the Owner and Contractor.

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§ 2.2 The Bidder is licensed by the State Licensing Board for General Contractors and the amount Bid does not exceed the Bid Limit stipulated in the Bidder's License and by the City of Mobile.

§ 2.3 Each and every Contractor belonging to or comprising a part of any entity that is bidding as a joint venture or association involving two or more contractors is licensed by the State Licensing Board for General Contractors and that the amount Bid does not exceed the Bid limit stipulated in at least one of their licenses.

§ 2.4 Any non-resident Bidder is authorized by the Secretary of State of Alabama and is registered with Alabama Department of Revenue to transact business in Alabama.

§ 2.5 Joint Ventures or Associations of Contractors, whether the same are Bidders or Subcontractors of Bidders, will remain in existence until all insurance and warranty requirements for the Project have been fulfilled.

ARTICLE 3 BIDDING DOCUMENTS

§ 3.1 Distribution

§ 3.1.1 Bidders shall obtain complete Bidding Documents, as indicated below, from the issuing office designated in the advertisement or invitation to bid, for the deposit sum, if any, stated therein.

§ 3.1.2 Any required deposit shall be refunded to Bidders who submit a bona fide Bid and return the paper Bidding Documents in good condition within ten days after receipt of Bids. The cost to replace missing or damaged paper documents will be deducted from the deposit. A Bidder receiving a Contract award may retain the paper Bidding Documents, and the Bidder's deposit will be refunded.

§ 3.1.3 Bidding Documents will not be issued directly to Sub-bidders unless specifically offered in the advertisement or invitation to bid, or in supplementary instructions to bidders.

§ 3.1.4 Bidders shall use complete Bidding Documents in preparing Bids. Neither the Owner nor Architect assumes responsibility for errors or misinterpretations resulting from the use of incomplete Bidding Documents.

§ 3.1.5 The Bidding Documents will be available for the sole purpose of obtaining Bids on the Work. No license or grant of use is conferred by distribution of the Bidding Documents.

§ 3.2 Modification or Interpretation of Bidding Documents

§ 3.2.1 The Bidder shall carefully study the Bidding Documents, shall examine the site and local conditions, and shall notify the Architect of errors, inconsistencies, or ambiguities discovered and request clarification or interpretation pursuant to Section 3.2.2.

§ 3.2.2 Requests for clarification or interpretation of the Bidding Documents shall be submitted by the Bidder in writing and shall be received by the Architect at least five (5) calendar days prior to the date for receipt of Bids.

§ 3.2.3 Modifications and interpretations of the Bidding Documents shall be made by Addendum. Modifications and interpretations of the Bidding Documents made in any other manner shall not be binding, and Bidders shall not rely upon them.

§ 3.2.4 The Contract Drawings and Specifications are intended to cooperate and agree, but should conflicts or difference be found to exist between the requirements within either and clarification has not been obtained in accordance with the above procedure prior to Bidding, then the most costly and/or restrictive interpretation by the decision of the Architectural Engineering Department Director will be final.

§ 3.3 Substitutions

§ 3.3.1 The materials, products, and equipment described in the Bidding Documents establish a standard of required function, dimension, appearance, and quality to be met by any proposed substitution.

§ 3.3.2 Substitution Process

§ 3.3.2.1 Written requests for substitutions shall be received by the Architect at least five (5) calendar days prior to the date for receipt of Bids. Requests shall be submitted in the same manner as that established for submitting clarifications and interpretations in Section 3.2.2.

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§ 3.3.2.2 Bidders shall submit substitution requests on a Substitution Request Form if one is provided in the Bidding Documents.

§ 3.3.2.3 If a Substitution Request Form is not provided, requests shall include (1) the name of the material or equipment specified in the Bidding Documents; (2) the reason for the requested substitution; (3) a complete description of the proposed substitution including the name of the material or equipment proposed as the substitute, performance and test data, and relevant drawings; and (4) any other information necessary for an evaluation. The request shall include a statement setting forth changes in other materials, equipment, or other portions of the Work, including changes in the work of other contracts or the impact on any Project Certifications (such as LEED), that will result from incorporation of the proposed substitution.

§ 3.3.3 The burden of proof of the merit of the proposed substitution is upon the proposer. The Architect's decision of approval or disapproval of a proposed substitution shall be final.

§ 3.3.4 If the Architect approves a proposed substitution prior to receipt of Bids, such approval shall be set forth in an Addendum. Approvals made in any other manner shall not be binding, and Bidders shall not rely upon them.

§ 3.3.5 No substitutions will be considered after the Contract award unless specifically provided for in the Contract Documents.

§ 3.3.6 See Division One Section "Substitution Procedures", if included in Specification.

§ 3.4 Addenda

§ 3.4.1 Addenda will be transmitted to Bidders known by the issuing office to have received complete Bidding Documents.

§ 3.4.2 Addenda will be available where Bidding Documents are on file.

§ 3.4.3 Addenda will be issued no later than two (2) days prior to the date for receipt of Bids, except an Addendum withdrawing the request for Bids or one which includes postponement of the date for receipt of Bids.

§ 3.4.4 Prior to submitting a Bid, each Bidder shall ascertain that the Bidder has received all Addenda issued, and the Bidder shall acknowledge their receipt in the Bid.

ARTICLE 4 BIDDING PROCEDURES

§ 4.1 Preparation of Bids

§ 4.1.1 Bids shall be submitted on the forms included with or identified in the Bidding Documents. No bid will be considered unless made out and submitted on a copy of the Bid Form, Section 00400. Additional Bid Forms will be furnished to prospective Bidders upon request.

§ 4.1.2 All blanks on the bid form shall be legibly executed. Paper bid forms shall be executed in a non-erasable medium.

§ 4.1.3 Sums shall be expressed in both words and numbers, unless noted otherwise on the bid form. In case of discrepancy, the amount entered in words shall govern.

§ 4.1.4 Edits to entries made on paper bid forms must be initialed by the signer of the Bid.

§ 4.1.5 All requested Alternates shall be bid. If no change in the Base Bid is required, enter "No Change" or as required by the bid form.

Unit Prices: Supply requested Unit Prices where shown on the Bid Form, Such Unit Prices shall be used to adjust the Contract Amount where the quantities shown on the Drawings and/or Specifications do not reflect amounts required for completion of the work. Where Completion of the Work requires quantities in excess of those shown on the drawings and specifications, unit prices shall be used to compute an extra payment to the Contractor. Where completion of work required quantities less than those on the Drawings and/or specifications, unit prices shall be used to compute a credit to the Owner.

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Contingency Allowance: As shown on the Bid Form, Contractor shall add the amount of the contingency allowance to the Base Bid to derive the Total Bid. The contingency allowance shall cover cost of material, labor, overhead, profit and other expenses for complete installation of items of additional work as required for a complete functional project. The contingency allowance shall be used to fund unforeseen conditions not covered in the construction documents and shall be subject to the provisions of change orders. Upson the completion of work any unused portion of the contingency allowance shall be credited to the Owner by change order.

§ 4.1.6 Where two or more Bids for designated portions of the Work have been requested, the Bidder may, without forfeiture of the bid security, state the Bidder's refusal to accept award of less than the combination of Bids stipulated by the Bidder. The Bidder shall neither make additional stipulations on the bid form nor qualify the Bid in any other manner.

§ 4.1.7 Each copy of the Bid shall state the legal name and legal status of the Bidder. As part of the documentation submitted with the Bid, the Bidder shall provide evidence of its legal authority to perform the Work in the jurisdiction where the Project is located. Each copy of the Bid shall be signed by the person or persons legally authorized to bind the Bidder to a contract. A Bid by a corporation shall further name the state of incorporation and have the corporate seal affixed. A Bid submitted by an agent shall have a current power of attorney attached, certifying the agent's authority to bind the Bidder.

§ 4.1.8 A Bidder shall incur all costs associated with the preparation of its Bid.

§ 4.2 Bid Security

§ 4.2.1 Each Bid shall be accompanied by the following bid security if so required in the Bidding Documents:
(Insert the form and amount of bid security.)

«The Bidder shall provide a Bid Security in the form of a cashier's check drawn on an Alabama bank or a Bid Bond. Bid Security is required for bids exceeding $50,000.00. Bid Security shall be in the amount of 5% of the TOTAL BID, but in no event more than $10,000.00.»

§ 4.2.2 The Bidder pledges to enter into a Contract with the Owner on the terms stated in the Bid and shall, if required, furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder. Should the Bidder refuse to enter into such Contract or fail to furnish such bonds if required, the amount of the bid security shall be forfeited to the Owner as liquidated damages, not as a penalty.

§ 4.2.3 If a surety bond is required as bid security, it shall be written on AIA Document A310™, Bid Bond, unless otherwise provided in the Bidding Documents. The attorney-in-fact who executes the bond on behalf of the surety shall affix to the bond a certified and current copy of an acceptable power of attorney. The Bidder shall provide surety bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 4.2.4 The Owner will have the right to retain the bid security of Bidders to whom an award is being considered until (a) the Contract has been executed and bonds, if required, have been furnished; (b) the specified time has elapsed so that Bids may be withdrawn; or (c) all Bids have been rejected.

§ 4.2.5 Bonds must be issued by a Surety authorized to do business in the State of Alabama. A Performance Bond and a Labor and Material Payment Bond are required for projects exceeding $10,000.00. If the project cost is $50,000.00 or more, the Surety must have a minimum rating of A/Class VI as reported by the latest issue of Best's Key Rating Guide Property-Casualty published by Alfred M. Best Company, Inc.

§ 4.3 Submission of Bids

§ 4.3.1 A Bidder shall submit its Bid as indicated below:
(Indicate how, such as by website, host site/platform, paper copy, or other method Bidders shall submit their Bid.)

«Submission of Bid shall be as stated in Section 00 11 16, Invitation to Bid, Paragraph 9, titled "Bid Submittal". »

§ 4.3.3 Bids shall be submitted by the date and time and at the place indicated in the invitation to bid. Bids submitted after the date and time for receipt of Bids, or at an incorrect place, will not be accepted and will be returned unopened.

§ 4.3.4 The Bidder shall assume full responsibility for timely delivery at the location designated for receipt of Bids.

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§ 4.3.5 A Bid submitted by any method other than as provided in this Section 4.3 will not be accepted.

§ 4.4 Modification or Withdrawal of Bid

§ 4.4.1 Prior to the date and time designated for receipt of Bids, a Bidder may submit a new Bid to replace a Bid previously submitted, or withdraw its Bid entirely, by notice to the party designated to receive the Bids. Such notice shall be received and duly recorded by the receiving party on or before the date and time set for receipt of Bids. The receiving party shall verify that replaced or withdrawn Bids are removed from the other submitted Bids and not considered. Notice of submission of a replacement Bid or withdrawal of a Bid shall be worded so as not to reveal the amount of the original Bid.

§ 4.4.2 Withdrawn Bids may be resubmitted up to the date and time designated for the receipt of Bids in the same format as that established in Section 4.3, provided they fully conform with these Instructions to Bidders. Bid security, if required, shall be in an amount sufficient for the Bid as resubmitted.

ARTICLE 5 CONSIDERATION OF BIDS

§ 5.1 Opening of Bids

If stipulated in an advertisement or invitation to bid, or when otherwise required by law, Bids properly identified and received within the specified time limits will be publicly opened and read aloud. A summary of the Bids may be made available to Bidders.

§ 5.2 Rejection of Bids

Unless otherwise prohibited by law, the Owner shall have the right to reject any or all Bids.

§ 5.3 Acceptance of Bid (Award)

§ 5.3.1 It is the intent of the Owner to award a Contract to the lowest responsive and responsible Bidder, provided the Bid has been submitted in accordance with the requirements of the Bidding Documents and does not exceed the funds available. Unless otherwise prohibited by law, the Owner shall have the right to waive informalities and irregularities in a Bid received and to accept the Bid which, in the Owner's judgment, is in the Owner's best interests.

§ 5.3.2 The Owner shall accept Alternates in the order listed on the Bid Form to determine the lowest responsive and responsible Bidder on the basis of the sum of the Base Bid and Alternates accepted.

ARTICLE 6 POST-BID INFORMATION

§ 6.1 Contractor's Qualification Statement

Bidders to whom award of a Contract is under consideration shall submit to the Architect, upon request and within the timeframe specified by the Architect, a properly executed AIA Document A305™, Contractor's Qualification Statement, unless such a Statement has been previously required and submitted for this Bid.

§ 6.3 Submittals

§ 6.3.1 After notification of selection for the award of the Contract, the Bidder shall, within three (3) calendar days or as stipulated in the Bidding Documents, submit in writing to the Owner through the Architect:

- **.1** a designation of the Work to be performed with the Bidder's own forces;
- **.2** names of the principal products and systems proposed for the Work and the manufacturers and suppliers of each; and
- **.3** names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for the principal portions of the Work.
- **.4** The name of the Project Superintendent and Project Manager together with the resume of qualifications of each;
- **.5** Nonresident Contractor shall submit a letter from an attorney as required by Subparagraph 11.1.2 below and;
- **.6** Engineering Firm or Testing Laboratory for testing as specified.

§ 6.3.2 The Bidder will be required to establish to the satisfaction of the Architect and Owner the reliability and responsibility of the persons or entities proposed to furnish and perform the Work described in the Bidding Documents.

§ 6.3.3 Prior to the execution of the Contract, the Architect will notify the Bidder if either the Owner or Architect, after due investigation, has reasonable objection to a person or entity proposed by the Bidder. If the Owner or Architect has reasonable objection to a proposed person or entity, the Bidder may, at the Bidder's option, withdraw the Bid or submit

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an acceptable substitute person or entity. The Bidder may also submit any required adjustment in the Base Bid or Alternate Bid to account for the difference in cost occasioned by such substitution. The Owner may accept the adjusted bid price or disqualify the Bidder. In the event of either withdrawal or disqualification, bid security will not be forfeited.

§ 6.3.4 Persons and entities proposed by the Bidder and to whom the Owner and Architect have made no reasonable objection must be used on the Work for which they were proposed and shall not be changed except with the written consent of the Owner and Architect.

§ 6.3.5 The Contractor shall, within ten (10) calendar days of receiving Contract Forms for signature, furnish to the Owner the following items, along with the signed contract, or the Bid Security will be forfeited automatically without further delay:

.1 A Signed Construction Contract;
.2 Performance Bond and Labor and Material Payment Bond (originals) on all Bids over $10,000.00;
.3 Certificate of Insurance and copy of Builder's Risk Policy (original), as identified in the specifications;
.4 Schedule of Values; and
.5 Federal Immigration Law Compliance: E-Verify enrollment documentation.

§ 6.3.6 The Bid Check or Bond of the three (3) lowest Bidders will not be returned until after the Construction Contract is executed.

ARTICLE 7 PERFORMANCE BOND AND PAYMENT BOND

§ 7.1 Bond Requirements

§ 7.1.1 If stipulated in the Bidding Documents, the Bidder shall furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder.

§ 7.1.2 If the furnishing of such bonds is stipulated in the Bidding Documents, the cost shall be included in the Bid. If the furnishing of such bonds is required after receipt of bids and before execution of the Contract, the cost of such bonds shall be added to the Bid in determining the Contract Sum.

§ 7.1.3 The Bidder shall provide surety bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 7.1.4 Unless otherwise indicated below, the Penal Sum of the Payment and Performance Bonds shall be the amount of the Contract Sum.

§ 7.1.4 A Surety authorized to do business in the State of Alabama shall issue Performance Bond and Labor and Material Payment Bond, as required by the Contract Documents. If the project cost is $50,000.00 or more, the Surety must have a minimum rating of A/Class VI as reported by the latest issue of Best's Key Rating Guide Property-Casualty, published by Alfred M. Best Company, Inc.

§ 7.2 Time of Delivery and Form of Bonds

§ 7.2.1 The Bidder shall deliver the required bonds to the Owner not later than ten (10) calendar days from receiving the Construction Contract forms for signature.

§ 7.2.2 The bonds shall be written on City's Performance Bond and Labor and Material Payment Bond forms.

§ 7.2.3 The bonds shall be dated on or after the date of the Contract.

§ 7.2.4 The Bidder shall require the attorney-in-fact who executes the required bonds on behalf of the surety to affix to the bond a certified and current copy of the power of attorney.

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ARTICLE 8 FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR

Unless otherwise required in the Bidding Documents, the Agreement for the Work will be written on AIA Document A101, Standard Form of Agreement Between Owner and Contractor Where the Basis of Payment Is a Stipulated Sum.

§ 8.1.1 AIA Document A101, Standard Form of Agreement Between Owner and Contractor where the Basis of Payment is a stipulated sum will be edited electronically and include the standard signatures as required by the City of Mobile.

ARTICLE 9 NONDISCRIMINATION

§9.1.1 Contractor shall comply with all Federal, State and local laws concerning nondiscrimination, including but not limited to City of Mobile Ordinance No. 14-034 which requires, *inter alia*, that all contractors performing work for the City of Mobile not discriminate on the basis of race, creed, color, national origin or disability, require that all subcontractors they engage do the same, and make every reasonable effort to assure that fifteen percent of the work performed under contract be awarded to socially and economically disadvantaged individuals and business entities. Contractor shall provide a completed copy of the City of Mobile Subcontracting and Major Supplier Plan with the Bid Form, for bids of $250,000.00 or greater.

ARTICLE 10 USE OF DOMESTIC PRODUCTS

§ 10.1.1 Section 39-3-1 Code of Alabama provides that the Contractor agrees, in the execution of this contract, to use material supplies and products manufactured, mined, processed or otherwise produced in the United States or its territories, if available at reasonable prices, and that breach of this agreement by the Contractor shall result in the assessment of liquidated damages in an amount not less than $500 nor more than 20 percent of the gross amount of the contract price.

§ 10.1.2 Section 39-3-4, Code of Alabama provides that the Contractor for a municipal construction project, financed by the State of Alabama or any political subdivision thereof, is required to use steel produced within the United States. If the Contractor violates the requirement to use domestic steel, this contract will automatically be revoked and the contractor shall not be entitled to any set-off or recoupment for labor or materials used up to the time of revocation.

ARTICLE 11 PREFERENCE TO RESIDENT CONTRACTORS

§ 11.1.1 Except for contracts funded in whole or in part with funds received from a federal agency, preference shall be given to Alabama resident contractors, and a nonresident bidder domiciled in a state having laws granting preference to local contactors shall be awarded the contracts only on the same basis as a the nonresident bidder's state awards contracts to Alabama contractors bidding under similar circumstances. In the letting of public contracts in which any state, county or municipal funds are utilized, resident contractors in Alabama, be they corporations, individuals or partnerships, are to be granted preference over nonresidents in awarding of contracts in the same manner and to the same extent as provided by the laws of the state of domicile of the nonresident.

§ 11.1.2 A successful nonresident bidder shall include in his post bid submittals a written opinion of an attorney at law licensed to practice law in such nonresident bidders' state of domicile, as to the preferences, if any or none, granted by the law of that state to its own business entities whose principal places of business are in that state in the letting of any or all public contracts.

ARTICLE 12 PRE-BID REQUIREMENTS

§ 12.1 STATE OF ALABAMA CONTRACTORS LICENSE

§ 12.1.1 If the Project total bid amount is $50,000 or more, a license issued by the State of Alabama Licensing Board for General Contractors is required prior to submitting a bid and the licensed classification and bid limits must cover the type of work in this project. See Invitation to Bid, Section 6 "Bidder Qualifications".

§ 12.2 A NONRESIDENT BIDDER

§ 12.2.1 Every bidder shall be registered with the Department of Revenue prior to bidding and all bidders shall have a certificate of authorization to do business in Alabama from the Secretary of the State of Alabama. The registration number shall be included on the bid form.

ARTICLE 13 POST-BID REQUIREMENTS

§ 13.1 CITY CONTRACTOR'S LICENSE

13.1.1 A City of Mobile Contractor's License is required and must be current at the time of bidding. Contractor must qualify and post $10,000.00 Surety Bond with the Land Use/Code Administration Department before a Contractor's

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License will be issued by the Revenue Department. Information on the City Contractor's License may be obtained by writing or calling:

Land Use/Code Administration
P. O. Box 1827
Mobile, Alabama 36633-1827
Phone: 251.208.7421

Revenue Department
P. O. Box 1827
Mobile, Alabama 36633-1827
251.208.7461

13.2 E-VERIFY DOCUMENTATION

§ 13.2.1 The Contractor agrees that it shall comply with all of the requirements of the State of Alabama Immigration Law (Act. No. 2011-535 as amended by Act. No. 2012-491, Alabama Code (1975) Section 31-13-1, et. Seq., See Section 31-13-9), and the provisions of said Law, including all penalties for violation thereof, are incorporated therein.

13.3 PUBLIC CONTRACTS WITH ENTITIES ENGAGING IN CERTAIN BOYCOTT ACTIVITIES

§ 13.3 The Contractor represents and agrees that it is not currently engaged in, nor will engage in, any boycott of a person or entity based in or doing business with a jurisdiction with which the State of Alabama can enjoy open trade.

END OF SECTION

DRAFT

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SECTION 00 2200 - SUPPLEMENTARY INSTRUCTIONS TO BIDDERS

THE ATTENTION OF ALL BIDDERS IS CALLED TO THE FOLLOWING INSTRUCTIONS AND CONDITIONS:

PART 1 – GENERAL

1. BIDDING DOCUMENTS
   A. Bidders may obtain complete sets of Bid Documents and Specifications (Project Manual) from the Department of Architectural Engineering as listed in the Invitation to Bid.
   B. Bidders shall use the complete set of documents in preparing their bid. The City of Mobile assumes no responsibility for errors or misinterpretations resulting from use of an incomplete set of documents.

2. INTERPRETATION OF BID DOCUMENTS:
   A. Bidders shall carefully study and compare the Bidding Documents and compare various components of the Bidding Documents with each other, shall examine the site and local conditions and shall at once report to the Project Manager any errors, inconsistencies or ambiguities discovered.
   B. Bidders requiring clarification or interpretation of the Bidding Documents shall make a written request to the Project Manager by 12:00 PM at least five (5) calendar days prior to the date for receipt of Bids. E-mail requests are required and should be addressed to the Engineer at **christy@dellconsultingllc.com** with a copy sent to the City of Mobile Project Manager at **david.cordingly@cityofmobile.org**.
   C. Interpretations, corrections and changes to the Bidding Documents will be made by a formal, written Addendum. Interpretations, corrections and changes to the Bidding Documents made in any other manner will not be binding, and Bidders shall not rely on them.
   D. Any discrepancy not resolved prior to Bidding shall be bid by the Contractor to provide for the most costly and/or restrictive interpretation of the documents.

3. BIDDING PROCEDURES:
   A. No Bid will be considered unless made out and submitted on a copy of the Bid Form as set forth by the Bid Documents.
   B. All blanks on the Bid Form shall be legibly executed in a non-erasable medium.
   C. Sums shall be expressed in both words and figures. In case of discrepancy, the amount written in words shall govern.
   D. Interlineations, alterations and erasures must be initialed by the signer of the Bid.
   E. All requested Alternates, Unit Prices and Allowances shall be bid as indicated on the Bid Form and the Bid Documents.

F. Addenda shall be considered as a part of the Bid Documents and those issued prior to the opening of Bids shall be acknowledged on the Bid Form and any adjustment in cost shall be included in the Contract Sum.

4. BID SECURITY:

A. A Cashier's Check drawn on a bank registered to do business in the State of Alabama, and which is a member of the Federal Deposit Insurance Corporation, or Bid Bond payable to Owner, City of Mobile, in the amount of 5% of the Base Bid, but in no event more than $10,000.00, must accompany bid. By submitting a Bid Security, the Bidder pledges to enter into a Contract with the City of Mobile on the terms stated in the Bid, and will, if required, furnish bonds covering faithful performance of the Contract and required insurance certificate. Should the Bidder refuse to enter into such Contract or fail to furnish such bonds or insurance or any other required document, the amount of the Bid security shall be forfeited to the Owner as liquidated damages, not as a penalty.

B. Bid Bond shall be valid for a minimum of sixty (60) days from the date of the Bid. The Owner reserves the right to retain the security of all Bidders until the successful Bidder enters into the Contract or until (60) days after Bid opening, whichever is sooner.

C. Bonds must be issued by a Surety licensed to do business in the State of Alabama. If the project cost is more than $50,000.00 the Surety must have a minimum rating of A/Class VI as reported by the latest issue of Best's Key Rating Guide Property-Casualty published by Alfred M. Best Company, Inc.

D. Power of Attorney is required for all Bonds.

E. The Surety company shall be required to execute AIA Document G-707, "Consent of Surety to Final Payment" prior to Final Payment of retainage being made to the Contractor.

5. EXAMINATION OF DOCUMENTS AND SITE WORK:

A. Before submitting a Bid, Bidders should carefully examine the Bid Documents, visit the site of the Work, including attendance at the Pre-Bid Conference, fully inform themselves as to existing conditions and limitations, and include in the Bid a sum to cover the cost of all items included in the Contract and necessary to perform the Work. The submission of a Bid will be considered as conclusive evidence that the Bidder has made such examination.

6. SUBMISSION OF BIDS:

A. Bid, with Bid Security, Sales Tax Form C-3A, Subcontractor & Major Supplier Plan, and other supporting data specified, shall be contained in a sealed, opaque envelope, approximately 9x12 inches or larger and be marked on the outside with the words **"SEALED BID FOR MPD TRAFFIC SAFETY UNIT – EMERGENCY GENERATOR, PROJECT NUMBER: PD-003-25",** the Bid Date, and Contractor's name, address, and City of Mobile Business License number. And, if bidding in an amount $50,000 or greater, the State of Alabama General Contractor's License number and classification of the Bidder issued by the State of Alabama Licensing Board for General Contractors shall be written on the envelope.

B. Bids shall be deposited at the designated location prior to the time and date for receipt of Bids. Bids received after the time and date specified in the Invitation to Bid, or as modified by Addendum, will not be considered. Late Bids will be returned to the Bidder unopened.

C. The Bidder shall assume full responsibility for timely delivery at the location designated for receipt of Bids.

D. Oral, telephonic, facsimile or other electronically transmitted bids will not be considered.

7. MODIFICATION OR WITHDRAWAL OF BIDS:

A. A Bid may not be modified, withdrawn, or canceled by the Bidder for a period of sixty (60) days following the time and date designated for receipt of bids, and each Bidder so agrees in submitting a Bid.

8. CONSIDERATION AND AWARD OF BIDS:

A. At the discretion of the City, the properly identified Bids received on time will be publicly opened and will be read aloud.

B. The City shall have the right to reject any and all Bids. A Bid not accompanied by a required Bid security or a Bid which is in any way incomplete or irregular is subject to rejection.

C. It is the intent of the City to award a Contract to the lowest qualified Bidder provided the Bid has been submitted in accordance with the requirements of the Bidding Documents and does not exceed the funds available. The City shall have the right to waive informalities and irregularities in a Bid received and to accept the Bid which, in the City's judgment, is in the City's best interest.

D. The award shall be based on the lowest Total Bid for the Base Bid and any allowances, plus any alternates and/or options that may be accepted, as listed on the Bid Form.

9. PROOF OF COMPETENCY OF BIDDER:

A. Bidders may be required to furnish evidence satisfactory to the City of Mobile that they have sufficient means and experience in the types of work called for to assure the completion of the Contract in a satisfactory manner.

10. SIGNING OF CONTRACT:

A. The Standard Agreement between the City of Mobile and the Contractor, included herein, shall serve as the Agreement between the City and the Contractor.

B. The Bidder to whom the Contract is awarded shall, within ten (10) calendar days of receiving the Contract Forms, properly execute and deliver to the Owner, the following items with the signed Agreement:
   (1). Performance Bond and Labor and Material Payment Bond (originals);
   (2). Certificate of Insurance (original) with endorsements to City of Mobile;
   (3). Evidence of enrollment in the E-Verify program.
   (4). Other documentation as required by the Contract Documents.

C. Failure or refusal to sign the Agreement or to provide Certificates of Insurance in a form satisfactory to the City of Mobile, E-Verify verification, or other required documentation, shall subject the Bidder to immediate forfeiture of Bid Security.

D. On all documents: City of Mobile Business License, the Alabama Secretary of State Business Identity, the Alabama Secretary of State Certificate of Authority (out of state contractors), E-Verify documentation, and ACORD Insurance Form, the Contractor's name shall be EXACTLY the same.

11. NONDISCRIMINATION:

A. Contractor shall comply with all Federal, State and local laws concerning nondiscrimination, including but not limited to City of Mobile Ordinance No. 14-034 which requires, inter alia, that all contractors performing work for the City of Mobile not discriminate on the basis of race, creed, color, national origin or disability, require that all subcontractors they engage do the same, and make every reasonable effort to assure that fifteen percent of the work performed under contract be awarded to socially and economically disadvantaged individuals and business entities.

12. AMERICANS WITH DISABILITIES ACT (ADA):

A. Bidders shall comply with the provisions of the Americans with Disabilities Act (ADA) of 2010 which prohibits discrimination against individuals with disabilities.

13. USE OF DOMESTIC PRODUCTS:

A. Section 39-3-1, Alabama Code, 1975, provides that the Contractor agree, in the execution of this Contract, to use materials, supplies and products manufactured, mined, processed or otherwise produced in the United States or its territories, if available at reasonable prices, and that breach of this Agreement by the Contractor shall result in the assessment of liquidated damages in an amount not less than $500.00 nor more than twenty (20) percent of gross amount of the Contract Price.

14. NON-RESIDENT (OUT OF STATE) CONTRACTORS:

A. Preference to Resident Contractors: Section 39-3-5, Code of Alabama, 1975, provides that a non-resident (out of State) bidder domiciled in a state which grants a preference to local Contractors is to be awarded a public contract on the same basis as the non-resident bidder's state awards contracts to Alabama bidders. Alabama bidders are given a preference to the same extent that a non-resident bidder receives a preference in his home state. A non-resident bidder must include with any written bid documents a written opinion of an attorney licensed to practice in the non-resident bidder's state declaring what preferences, if any, exists in the non-resident's state.

B. Certificate of Authority: All non-resident (out of State) bidders shall be registered with the Alabama Secretary of State and the Alabama Department of Revenue prior to submitting a Bid. Provide the Secretary of State Business "Entity ID Number" on the Bid Form in the space provided.

15. ALABAMA IMMIGRATION ACT:

A. The State of Alabama Immigration Law (Act No. 2011-535 as amended by Act No. 2012-491), requires that Contractors not violate federal immigration law or knowingly employ, hire for employment, or continue to employ an unauthorized alien within the State of Alabama. In

addition, Contractors are required to enroll in the federal E-Verify program and submit verification of enrollment to the City of Mobile within ten (10) days of receiving the contract forms (see Section 00 60 00).

16. CITY OF MOBILE BUSINESS LICENSE:

A. A City of Mobile Business License is required and must be current at time of contract award and throughout contract period.

17. CITY OF MOBILE CONTRACTOR'S BUSINESS LICENSE:

A. A City of Mobile Contractor's Business License is required and must be current when contractor signs the contract and throughout contract period.

B. Contractor must qualify and post a $10,000 surety bond with the Land Use/Code Administration Department before a Contractor's Business License will be issued by the Revenue Department. Information on the City Contractor's License may be obtained by writing or calling:

Land Use/Code Administration
P.O. Box 1827
Mobile, Alabama 36633-1827
Phone: 251-208-7421

Revenue Department
P.O. Box 1827
Mobile, Alabama 36633-1827
Phone: 251-208-7461

18. CITY OF MOBILE BUILDING PERMIT:

A. A City of Mobile Building Permit, City of Mobile Development Permit AND Certificate of Appropriateness is required and shall be obtained from the Land Use/Code Administration Department, but at no cost to the Contractor.

B. Contractor is responsible for ensuring that all inspections are successfully performed in accordance with City of Mobile regulations.

19. CONSTRUCTION SCHEDULE AND ACCESS:

A. The project shall be completed within **Sixty (60) calendar days** from the date indicated by the Notice to Proceed.

B. Within five (5) days of the bid opening, the Apparent Low Bidder Contractor shall meet with the Owner to discuss Owner scheduling and priorities. Apparent Low Bidder shall then provide a proposed schedule within 5 calendar days of the initial meeting for Owner review and approval.

C. Contractor shall have access to the site as approved by the Owner, but typically **seven days a week from 6:00 A.M. to 6:00 P.M.** Contractor is directed to coordinate all areas of work and scheduling with the Owner. After hours work will require prior approval of the Project Manager and may require hiring of a guard at the contractor's expense.

D. The Contractor may be allowed additional construction days due to inclement conditions ("rain days") only as such are appropriately documented and are in excess of the NOAA/National

Weather Service average (previous 5 years) for the given month. A "rain day" is defined as more than a "trace" (0.10") of rain falling within a given 24-hour period. The Contractor shall provide documentation and formally request any "rain days" they feel are legitimately due. Documentation shall be submitted to the Project Manager, in writing, within ten (10) calendar days of the rain event. Claim shall include documentation of trades adversely impacted and the impacted activities of each trade.

20. SITE CONSIDERATIONS:

A. It is the Contractor's responsibility to carefully remove and store any items not permanently installed within the work areas. It is recommended that the Contractor photograph, videotape or in some manner document any features to be removed and their condition, prior to removal.

B. Noise and strong smells shall be isolated or kept to a minimum when adjacent portions of the site are occupied.

C. Contractor shall be responsible to leave the work area and adjacent site clear of equipment and debris, etc. at the end of each workday. All final cleaning is the responsibility of the Contractor and shall be executed prior to acceptance for reuse of any portion of the site.

D. A dumpster and lay down area for Contractor materials and staging may be located at the site and located per the direction of the Owner. The Contractor is responsible for the removal of the dumpster, any storage containers and any security fencing, temporary erosion control (BMPs), etc. as soon as practical after their use by the Contractor or the work is complete.

21. SALES AND USE TAX EXEMPTION:

A. As per the State of Alabama ACT 2013-205, the Alabama Department of Revenue (ADOR) has been granted the authority to issue a "Certificate of Exemption from Sales and Use Tax for Governmental Entities" on construction projects. Therefore, this project shall qualify for State of Alabama Sales and Use Tax Exemptions under this ACT. It is the responsibility of the Bidder to confirm the potential tax-exempt status of their bid with the ADOR and include any such savings in their bid, as well as accounting for same on their bid form attachment Sales Tax Form C-3A.

B. The full text of ACT 2013-205 is available on the State of Alabama Building Commission website at **www.bc.alabama.gov**.

22. SUBMISSION OF LIEN WAIVERS:

A. At each monthly Application for Payment submitted to the owner, the Contractor shall provide completed lien waivers, including those from Subcontractors and material suppliers.

23. NOTICE OF COMPLETION:

A. For Contracts $50,000 or greater:
Contractor shall provide proof of publication of Advertisement of Completion for four consecutive weeks in a local newspaper, as required in the Title 39, Section 39-1-1, Subsection (f), of the Code of Alabama. This Advertisement shall not begin until the Project has been accepted by the City of Mobile.

B. Notice of Completion Advertisement shall read as follows:

STATE OF ALABAMA
COUNTY OF MOBILE

NOTICE OF COMPLETION
In accordance with Chapter 1, Title 39, Code of Alabama, 1975, NOTICE IS HEREBY given that **(COMPANY NAME)** has completed the contract for **MPD TRAFFIC SAFETY UNIT – EMERGENCY GENERATOR, PROJECT NUMBER: PD-003-25**, 850 Virgina Street, Mobile, Alabama, 36603. All persons having any claims for labor, material or otherwise in connection with this project should immediately notify the Architectural Engineering Department, City of Mobile, P.O. Box 1827, Mobile, Alabama 36633-1827.

C. Advertisement shall not begin until the Project has been accepted by the City of Mobile as Substantially Complete.

24. CONTRACTOR WARRANTY AND CERTIFICATION:

A. Upon completion of the contract, the Contractor shall certify under oath that all bills have been paid in full.

B. Contractor shall provide a one-year Labor and Materials Warranty on company letterhead in addition to other warranties required by the Bid Documents.

25. LIQUIDATED DAMAGES

A. A time charge equal to Two Hundred Fifty Dollars ($250.00) per calendar day will be made against the Contractor for the entire period that any part of the Work remains uncompleted, or any required closeout documents are not acceptably submitted, for more than thirty (30) calendar days after the time specified for the Substantial Completion for the Work, the amount of which shall be deducted by the owner, and shall be retained by the Owner out of monies otherwise due the Contractor in the final payment, not as a penalty, but as liquidated damages sustained.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 00 2200

SECTION 00 4100 - BID FORM

Copies of the following Bid Forms shall be used. Bids submitted on alternate forms may be rejected. Fill in all blank spaces with an appropriate entry. Bid Form must be signed by an officer of the company and notarized.

TO: City of Mobile, 205 Government St., P.O. Box 1827, Mobile, AL, 36633

REF:	**PROJECT NO.:**	**PD-003-25**
	PROJECT NAME:	**MPD TRAFFIC SAFETY UNIT EMERGENCY GENERATOR**
	PROJECT LOCATION:	**850 Virginia Street Mobile, Alabama 36603**

In compliance with the Bid Documents and having carefully and thoroughly examined said documents for the subject Work prepared by the City of Mobile, Architectural Engineering Department dated May 7, 2025; and all Addendum (a) Number(s) _____, dated_____, 2025 (CAUTION: before submitting any bid it is the Bidder's responsibility to check with the Architectural Engineering Department for all Addenda or special instructions that may impact the Bid) thereto, receipt of which is hereby acknowledged, the premises and all conditions affecting the Work prior to making this Proposal, the Undersigned Bidder, hereby

COMPANY NAME: _____

ADDRESS: _____ PHONE: _____

ALABAMA GENERAL CONTRACTOR LICENSE NO. _____

CITY OF MOBILE BUSINESS LICENSE NO. _____

SECRETARY OF STATE OF ALABAMA BUSINESS IDENTITY NO. _____

SECRETARY OF STATE OF ALABAMA ACCOUNT NO. _____

(Note: Secretary of State Account Number shall be filled in only by non-resident bidders)

(Check one) [ ] A Corporation [ ] A Partnership [ ] An Individual Doing Business

hereby proposes to furnish all labor, materials, tools, equipment, and supplies and to sustain all the expenses incurred in performing the Work on the above captioned Project in accordance with the terms of the Contract Documents, and all applicable laws and regulations for the sum listed below. The initial term of the Contract shall extend for Sixty (60) calendar days from the date of the Notice to Proceed.

The Bidder further declares that he is aware of the tax exempt status of the Owner and that sales/use/severance taxes are **excluded** from the amount of the bid.

BID

Base Bid: _____ .00

Contingency Allowance: $ 10,000.00

Total Bid (Base Bid + Allowance): _____ .00
(Amount in Figures)

_____ and no/100 dollars
(Amount in Words)

ALTERNATES (See Section 01 2300 – Alternates)

ALTERNATE NO. 1: Remove & Replace the Existing Switchboard Panel.

_____ Dollars
(Amount in Words)

($ _____ .00)
(Amount in Figures)

(Note: Show amount in both words and figures. In case of discrepancy, the amount in words shall govern). **Bids shall be provided in whole dollar amount with no cents.**

REQUIRED LISTING OF SUBCONTRACTORS/SUPPLIERS: List the subcontractors/suppliers for the trades listed below which you intend to use for the base bid. If no trades are designated, the listing is not required. List yourself for work you intend to self-perform. Any envelope adjustments to this section must be initiated by the bidder. Failure to complete this section may render your bid non-responsive. See Supplemental Instructions to Bidders for additional information.

(List requested trades here, if any)

BID SECURITY: The undersigned Bidder agrees that the attached Bid Security, as a Cashier's Check drawn on a bank registered to do business in the State of Alabama and which is a member of the Federal Deposit Insurance Corporation, or a Bid Bond, made payable to the City of Mobile, in the amount of 5% of the bid amount, but in no event more than $10,000, as the proper measure of liquidated damages which the City will sustain by the failure of the undersigned to execute the Contract. Said Bid Security shall become the property of the City of Mobile as liquidated damages as specified in the Contract Documents.

AMERICANS WITH DISABILITIES ACT (ADA): The undersigned Bidder agrees to fully comply with all requirements of the Americans with Disabilities Act of 2010 and the Amendment Act.

NONDISCRIMINATION: Contractor shall comply with all Federal, State and local laws concerning nondiscrimination, including but not limited to City of Mobile Ordinance No. 14-034 which requires, inter alia, that all contractors performing work for the City of Mobile not

discriminate on the basis of race, creed, color, national origin or disability, require that all subcontractors they engage do the same, and make every reasonable effort to assure that fifteen percent of the work performed under contract be awarded to socially and economically disadvantaged individuals and business entities.

SIGNATURE: If the undersigned Bidder is incorporated, the entire legal title of the company followed by "a corporation" should be used. If Bidder is an individual, then that individual's full legal name followed by doing business as (d/b/a) and name of firm, if any, should be used. If Bidder is a partnership, then the full name of each partner should be listed followed by "d/b/a" and name of firm, if any.

Ensure that name and exact arrangement thereof is the same on all forms submitted with this Bid. If a word is abbreviated in the official company name, such as "Co.", then use that abbreviation. If not abbreviated in the official name, spell out.

Bidder agrees not to revoke or withdraw this Bid until sixty (60) calendar days following the time and date for receipt of bids. If notified in writing of the acceptance of this Bid within this time period, Bidder agrees to execute a Contract based on this Bid on the proscribed form within ten (10) calendar days of said notification and to furnish Performance Bond and Materials and Payment Bond as specified.

COMPANY NAME: _____
(Printed or Typed)

BY: _____
(Signature of Company Officer)

COMPANY OFFICER: _____
(Printed or Typed)

TITLE: _____ **DATE:** _____, 2025
(Printed or Typed)

Sworn to and subscribed before me this _____ day of _____, 2025

_____
Notary Public

Attachments:

1. Bid Security, with Power of Attorney
2. Secretary of State Authorization (Out of state bidders only)
3. Sales Tax Form C-3A
4. City of Mobile Subcontractor and Major Supplier Plan

END OF BID FORM

SECTION 00 4200 - ACCOUNTING OF SALES TAX ATTACHMENT TO BID FORM
SALES TAX FORM C-3A

To: City of Mobile **Date:** _____

Name of Project: MPD TRAFFIC SAFETY UNIT – EMERGENCY GENERATOR
Project Number: PD-003-25

SALES TAX ACCOUNTING

Pursuant to Act 2013-205, Section 1(g) the Contractor accounts for the sales tax NOT included in the bid proposal form as follows:

	ESTIMATED SALES TAX AMOUNT
BASE BID:	$_____
ADD ALT. #1:	$_____

Failure to provide an accounting of sales tax shall render the bid non-responsive. Other than determining responsiveness, sales tax accounting shall not affect the bid pricing nor be considered in the determination of the lowest responsible and responsive bidder.

Legal Name of Bidder: _____

Mailing Address: _____

***By (Legal Signature):** _____

***Name (type or print):** _____ (Seal)

***Title:** _____

Telephone Number: _____

OFFICE OF SUPPLIER DIVERSITY

CITY OF MOBILE

Subcontracting and Major Supplier Plan

Contact Office of Supplier Diversity for questions on completing this form.
Via emai:Archnique.kidd@cityofmobile.org
251.208.7967
205 Government Street, 4th Floor

Bidders and Proposers – Please complete and submit these forms as required by your City of Mobile Bid or Proposal Specification.

This document provides information to the City of Mobile about the subcontractors and major suppliers you intend to use to complete this contract. Failure to submit this form, when so required by the bid or proposal specification, will render your bid non-responsible. Not all specifications require this form to be completed, or may require its completion under varying circumstances. Refer to the specification for direction.

The City of Mobile will use this form to:

- Understand your intended use of subcontractors and major suppliers as part of your bid/proposal submission.
- Evaluate your capability to complete the performance of this contract.
- Determine your use of Disadvantaged Business Enterprises (DBEs) as subcontractors and suppliers.
- For certain contracts, assess whether you exercised "good faith efforts" to use DBE subcontractors and suppliers for at least 15% of the value of your bid/proposal amount. (See City of Mobile City Code Sec. 14-2.)

Include this form with your bid/proposal submission. Should your bid be considered the lowest responsible bid, you will have the opportunity to update this form at contract signature. You also will be required to re-verify your information at contract conclusion.

The bid specification may require you to attempt in "good faith" to use DBE subcontractors and suppliers for at least 15% of the value of your bid in the performance of this contract. If you don't have that level of DBE subcontractor / supplier usage (as documented on **Form 1)**, you are required to complete the "good faith effort" documentation on **Form 2**. When so required, failure to adequately address the good faith effort factors on **Form 2** will render your bid or proposal as non-responsive. The determination whether the bid or proposal adequately demonstrates and documents a DBE subcontractor/supplier plan, or good faith efforts to complete such a plan, will be at the sole discretion of the City of Mobile. You are encouraged to work with the City of Mobile Supplier Diversity Manager when preparing this form.

About **"DBEs"**: The City of Mobile considers businesses owned by minorities, women, or disabled veterans to be DBEs. Please consult with the City Supplier Diversity Manager for clarification or lists of certified DBEs.

About **"Good Faith" Effort**: The City of Mobile expects contractors holding large contracts to recruit and engage DBEs to be a part of their team. If the specification sets, and you cannot meet, the 15% target, you must show us how you attempted to recruit and engage DBEs to meet this target. This helps the City identify DBE market weaknesses for development, and ensures all bidders are equally considering this obligation in preparing a bid. The "good faith effort" factors on **Form 2** are not intended to be a mandatory, exhaustive, or exclusive. They are a tool to help you, and to help the City consistently and fairly consider your effort.

Contact Office of Supplier Diversity for questions on completing this form.
Via emai:Archnique.kidd@cityofmobile.org
251.208.7967
205 Government Street, 4th Floor

FORM 1: Background and Plan

Section I. Information about your company

Company	
Address	
Telephone	
E-Mail	

RFP/RFQ Solicitation Number	
Project Description	
Is your company a DBE company?	Yes ☐ No ☐
Work force demographics	Male _____ Female _____ Minority _____ Non-minority _____ Vets _____ Total #of Employees _____

Subcontractor/Major Supplier Plan submitted by:

Printed Name: _____

Signature: _____Date: _____

Title: _____

The following employee will be designated as the **DBE Liaison** for all communication regarding DBE participation including documentation for DBE participation and maintenance of records of Good Faith Efforts for this contract award:

Name: _____Title: _____

E-mail:_ Phone: _____

Contact Office of Supplier Diversity for questions on completing this form.
Via emai:Archnique.kidd@cityofmobile.org
251.208.7967
205 Government Street, 4th Floor

FORM 1: Background and Plan

Section II. Plan for Subcontractors and Major Vendors

This form asks for your intentions to utilize subcontractors and suppliers as a potential contractor for the city of Mobile. For purposes of this form, disadvantaged individuals or enterprises include persons or small-business-enterprise owners who are women, members of a racial minority, or disabled military veterans.

RFP/RFQ/Bid # _____ Your Bid/Proposal Amount $_____ Date: _____/ _____/____

Description_____

Name of Bidder/Proposer: _____

I intend to use the following subcontractors: (Attach additional pages if necessary)

Subcontractor or Major Supplier	Phone	Scope of Work to be performed	$$ Value to be Performed	% Of Your Bid Amount	DBE?	Official Verification Only

Form 2: Good Faith Effort Documentation

Name of Bidder: _____

Contact Person: _____ Phone_____ Email_____

Please complete this form if you are unable to identify DBE subcontractors or suppliers to reach 15% of the value of your bid.

YES (☐)	NO (☐)	**Did you do these suggested areas for DBE recruitment and engagement**
		PRE-BID MEETING(S): The bidder attended all pre-bid meetings scheduled by the City to inform DBEs of contracting and subcontracting opportunities.
		CMDBE/ALDOT DBE LIST(S): The bidder utilized the Office of Supplier Diversity's list or lists of certified ALDOT DBE 's
		SMALL CONTRACT(S): The bidder selected specific portions of the work to be performed by DBEs in order to increase the likelihood of meeting the DBE goals (including breaking down contracts into smaller units to facilitate DBE participation). Consider support services, including insurance, accounting, temporary labor, and transportation, landscaping, and janitorial as potential areas for DBE use.
		FOLLOW-UP: The bidder followed-up initial indications of interest by DBEs by contacting those DBEs to determine with certainty if they remained interested in bidding.
		ADVERTISEMENT: The bidder advertised in general circulation and/or trade association publications concerning subcontracting opportunities, and allowed DBEs reasonable time to respond.
		INTERNET ADVERTISING: The bidder advertised DBE and/or subcontracting opportunities on the *City of Mobile* Facebook page or other internet portals that are accessible to DBEs and/or potential subcontractors.
		GOOD FAITH NEGOTIATIONS: The bidder negotiated in good faith with interested DBEs and did not reject DBEs as unqualified without sound business reasons based on a thorough investigation of their capabilities.

		INFORMATION: The bidder provided interested DBEs with adequate information about the plans, specifications and requirements of the subcontract.
		WRITTEN NOTICE(S): The bidder/proposer took the necessary steps to provide written notice in a manner reasonably calculated to inform DBEs of subcontracting opportunities and allowed sufficient time for them to participate effectively.
		COMMUNITY RESOURCES: The bidder/proposer used the services of available community organizations, small and/or disadvantaged business assistance offices and other organizations that provided assistance in the recruitment and placement of DBE firms.
		CONTRACT RECORDS: The bidder/proposer has maintained the following records for each DBE that has bid on the subcontracting opportunity: 1. Name, address, and telephone number; 2. A description of information provided by the bidder/proposer or subcontractor; and 3. A statement of whether an agreement was reached, and if not, why not, including any reasons for concluding that the DBE was unqualified to perform the job.

Please indicate if any of the following applied:

_____ There are not ways to break out 15% of the value of this contract for subcontractors / suppliers.

_____ Could not find sufficient DBEs to provide subcontracting or supplier services.

_____ DBEs were available but did not have sufficient qualifications or experience to meet the needs of this contract.

Please indicate additional efforts you have taken to recruit and engage DBEs. _____

_____

_____

Suggestions or comments to improve this program. _____

_____

SECTION 00 5000 - STANDARD FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR

PART 1 – GENERAL

This section includes the STANDARD FORM OF AGREEMENT BETWEEN OWNER and CONTRACTOR, AIA Document A101 - 2017, wherein the basis of payment is a Stipulated Sum; the document has been electronically modified to meet the Owner's requirements and shall be used for the Project.

DRAFT

AIA® Document A101® – 2017

Standard Form of Agreement Between Owner and Contractor

where the basis of payment is a Stipulated Sum

AGREEMENT made as of the « » day of « » in the year « »
(In words, indicate day, month and year.)

BETWEEN the Owner:
(Name, legal status, address and other information)

«CITY OF MOBILE »
«P.O. Box 1827 »
«Mobile, Alabama 36633-1827 »
«Contact: David M. Cordingly »

and the Contractor:
(Name, legal status, address and other information)

«Contactor Company Name »
«Contactor Company Address »
« »
«City of Mobile Business License Number: »
«Secretary of State Registration Number: »

for the following Project:
(Name, location and detailed description)

«MPD TRAFFIC SAFETY UNIT – EMERGENCY GENERATOR »
«850 Virginia Street »
«Mobile, Alabama 36603 »
«Project No. PD-003-25 »
«Project Scope: The general scope of work is the removal of an existing generator and the procurement and installation of a new 80kw natural gas generator and the associated (2) 200A Nema 3R Service Entrance rated Automatic Transfer Switches. »

The Engineer:
(Name, legal status, address and other information)

«JAGUAR CONSULTING, LLC »
«8658 Capital Drive North »
«Mobile, Alabama 36695»
«Contact: Christina Marie »

The Owner and Contractor agree as follows.

ADDITIONS AND DELETIONS: The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

The parties should complete A101®–2017, Exhibit A, Insurance and Bonds, contemporaneously with this Agreement. AIA Document A201®–2017, General Conditions of the Contract for Construction, is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

ELECTRONIC COPYING of any portion of this AIA® Document to another electronic file is prohibited and constitutes a violation of copyright laws as set forth in the footer of this document.

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TABLE OF ARTICLES

1 THE CONTRACT DOCUMENTS

2 THE WORK OF THIS CONTRACT

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4 CONTRACT SUM

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6 DISPUTE RESOLUTION

7 TERMINATION OR SUSPENSION

8 MISCELLANEOUS PROVISIONS

9 ENUMERATION OF CONTRACT DOCUMENTS, INSURANCE AND BONDS

ARTICLE 1 THE CONTRACT DOCUMENTS

The Contract Documents consist of this Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to execution of this Agreement, other documents listed in this Agreement, and Modifications issued after execution of this Agreement, all of which form the Contract, and are as fully a part of the Contract as if attached to this Agreement or repeated herein. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. An enumeration of the Contract Documents, other than a Modification, appears in Article 9.

ARTICLE 2 THE WORK OF THIS CONTRACT

The Contractor shall fully execute the Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others.

ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 3.1 The date of commencement of the Work shall be:
(Check one of the following boxes.)

[« X »] A date set forth in a notice to proceed issued by the Owner.

§ 3.2 The Contract Time shall be measured from the date of commencement of the Work.

§ 3.3 Substantial Completion

§ 3.3.1 Subject to adjustments of the Contract Time as provided in the Contract Documents, the Contractor shall achieve Substantial Completion of the entire Work:
(Check one of the following boxes and complete the necessary information.)

[« X »] Not later than «Sixty » («60 ») calendar days from the date of the Notice to Proceed for commencement of the Work.

§ 3.3.2 If the Contractor fails to achieve Substantial Completion as provided in this Section 3.3, liquidated damages, if any, shall be assessed as set forth in Section 4.5.

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ARTICLE 4 CONTRACT SUM

§ 4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be « _____ and 00/100 Dollars» ($ «_____.00»), subject to additions and deductions as provided in the Contract Documents.

Base Bid: $

Contingency Allowance: $

Total Base Bid: $

§ 4.2 Alternates

§ 4.2.1 Alternates, if any, included in the Contract Sum:

Item	Price
N/A	$

§ 4.3 Allowances, if any, included in the Contract Sum:
(Identify each allowance.)

Contingency Allowance	$

Contingency Allowance:

A. Contingency Allowance shall cover cost of material, labor, overhead, profit and other expenses for complete installation of items of additional work as required for a complete, functional project.
B. Contingency Allowance shall be used for unforeseen conditions not covered in the construction documents.
C. All extra work under this section must be authorized by the Owner, in writing, prior to materials or undertaking work.
D. Upon completion of the Work, the unused portion of the Allowance shall be credited back to the Owner in the form of a Change Order.
E. Allowances are subject to the same provision of AIA 201 Article 7.3.7.

§ 4.4 Unit prices, if any:
(Identify the item and state the unit price and quantity limitations, if any, to which the unit price will be applicable.)

Item	Units and Limitations	Price per Unit ($0.00)
N/A		

§ 4.5 Liquidated damages:
(Insert terms and conditions for liquidated damages, if any.)

«A time charge equal to Two Hundred Fifty and 00/100 Dollars ($250.00) per calendar day will be made against the Contractor for the entire period that any part of the Work remains uncompleted or any required closeouts documents are not acceptably submitted for more than thirty (30) days after the date specified for the substantial Completion of the Work, the amount of which shall be deducted by the owner, and shall be retained by the Owner out of monies otherwise due the Contractor in the final payment, not as a penalty, but as liquidated damages sustained. »

ARTICLE 5 PAYMENTS

§ 5.1 Progress Payments

§ 5.1.1 Based upon Applications for Payment submitted to the Architect by the Contractor and Certificates for Payment issued by the Architect, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents.

§ 5.1.2 The period covered by each Application for Payment shall be one calendar month ending on the 25th of the month.

§ 5.1.3 Provided that an Application for Payment in acceptable format is received by the Architect not later than the first «1st » day of a month, the Owner shall make payment of the amount certified to the Contractor not later than the tenth «10th » day of the «following» month. If an Application for Payment in acceptable format is received by the

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User Notes: (1987471724)

Architect after the application date fixed above, payment of the amount certified shall be made by the Owner not later than «Forty » (« 40») days after the Architect receives the Application for Payment.
(Federal, state or local laws may require payment within a certain period of time.)

§ 5.1.4 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work. The schedule of values shall be prepared in such form, and supported by such data to substantiate its accuracy, as the Architect may require. This accepted schedule of values shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 5.1.5 Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment.

§ 5.1.6 In accordance with AIA Document A201, General Conditions of the Contract for Construction (including Owner's then current Modifications), and subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

§ 5.1.6.1 The amount of each progress payment shall first include:

- **.1** That portion of the Contract Sum properly allocable to completed Work;
- **.2** That portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction, or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing and insured as specified.
- **.3** Completed work shall be determined by multiplying the percentage completion of each portion of the Work by the share of the Contract Sum allocated to that portion of the Work in the schedule of values.

§ 5.1.6.2 The amount of each progress payment shall then be reduced by:

- **.1** The aggregate of any amounts previously paid by the Owner;
- **.2** The amount, if any, for Work that remains uncorrected and for which the Architect has previously withheld a Certificate for Payment as provided in Article 9 of AIA Document A201–2017;
- **.3** Any amount for which the Contractor does not intend to pay a Subcontractor or material supplier, unless the Work has been performed by others the Contractor intends to pay;
- **.4** For Work performed or defects discovered since the last payment application, any amount for which the Architect may withhold payment, or nullify a Certificate of Payment in whole or in part, as provided in Article 9 of AIA Document A201–2017; and
- **.5** Retainage withheld pursuant to Section 5.1.7.

§ 5.1.6.3 Any Progress Payment shall include partial release of liens for material and labor for previous application for payment amount approved and paid. The DBE Utilization Report shall be included with the pay application.

§ 5.1.7 Retainage

§ 5.1.7.1 For each progress payment made prior to Substantial Completion of the Work, the Owner may withhold the following amount, as retainage, from the payment otherwise due:
(Insert a percentage or amount to be withheld as retainage from each Application for Payment. The amount of retainage may be limited by governing law.)

«Five percent (5%) of the first fifty percent (50%) of the completed work and after fifty percent (50%) completion has been accomplished, no further retainage shall be held from the original Contract Sum. Increases in the contract sum by Change Order shall also be subject to retainage. »

§ 5.1.7.1.1 The following items are not subject to retainage:
(Insert any items not subject to the withholding of retainage, such as general conditions, insurance, etc.)

«N/A »

§ 5.1.7.2 Except as set forth in this Section 5.1.7.3, upon Substantial Completion of the Work, the Contractor may submit an Application for Payment that includes the retainage withheld from prior Applications for Payment

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pursuant to this Section 5.1.7. The Application for Payment submitted at Substantial Completion shall not include retainage as follows:
(Insert any other conditions for release of retainage upon Substantial Completion.)

«The net amount of the Retainage shall be equal to two and one half percent (2.5%) of total Contract Sum, as increased or decreased by Change Order. »

§ 5.1.8 If final completion of the Work is materially delayed through no fault of the Contractor, the Owner shall pay the Contractor any additional amounts in accordance with Article 9 of AIA Document A201–2017.

§ 5.1.9 Except with the Owner's prior approval, the Contractor shall not make advance payments to suppliers for materials or equipment which have not been delivered and stored at the site.

§ 5.2 Final Payment

§ 5.2.1 Final monthly progress payment, constituting the entire unpaid balance of the Contract Sum, less retainage, shall be made by the Owner to the Contractor when

.1 the Contractor has fully performed the Contract except for the Contractor's responsibility to correct Work as provided in Article 12 of AIA Document A201 (including Owner's then-current modifications which may be obtained from the Owner or, alternatively, a copy of which is incorporated in the Project Manual and incorporated by reference herein as a part thereof), and to satisfy other requirements, if any, which extend beyond final payment; and

.2 a Certificate of Substantial Completion has been issued by the Architect/Owner and the project accepted.

§ 5.2.2 The Owner's final payment to the Contractor of retainage shall be made as follows:

« The final two and one half percent (2.5%) of the total Contract Sum retained will not be paid until proof of publication is submitted and all written claims paid in full. Contractor to submit the following:
•Contractor's Affidavit of Payment of Debts and Claims (AIA form G706, included in contract documents) with
a.) Contractor's Release or Waiver of Liens
b.) Releases or Waivers of Liens from Subcontractors and Material and Equipment Suppliers;
•Contractor's Affidavit of Release of Liens (AIA form G706A, included in contract documents);
•Consent of Surety, if any, to final payment (AIA form G707, included in contract documents);
•Any additional close out requirements per the contract documents; and
•Notarized Affidavit of Notice of Completion advertisement from publisher.

Contractor shall provide proof of publication of Notice of Completion in a local newspaper once per week for four (4) consecutive weeks, as required in the Title 39, Section 39-1-1, Subsection (f), of the Code of Alabama quoted below. "The Contractor shall, immediately after the completion of the contract, give notice of Completion by an advertisement in a newspaper of general circulation published within the city or county in which the work has been done, for a period of four (4) consecutive weeks. A final settlement shall not be made upon the contract until the expiration of thirty (30) days after the completion of the notice. Proof of publication of the notice shall be made by the contractor to the authority by whom the contract was made by affidavit of the publisher and a printed copy of the notice published. If no newspaper is published in the county in which the work is done, the notice may be given by the contract." (Acts 1927, No. 39, 9.37; Acts 1935, No. 39, 9. 70; Code 1940, T. 50, Section 16; Acts 1983, No. 83-737, 9.1203; Acts 1989, No. 89-650m 9. 1284, Section 1; Acts 1994, No. 94-207, p, 270, Section 1; Acts 1997, No. 97-225, p. 348, Section 1.)

The Notice of Completion shall read as follows:

STATE OF ALABAMA
COUNTY OF MOBILE
NOTICE OF COMPLETION

In accordance with Chapter I, Title 39, Code of Alabama, 1975, NOTICE IS HEREBY given that <Contractor> has completed the contract for MPD TRAFFIC SAFETY UNIT - EMERGENCY GENEREATOR (PD-003-25), 850 Virginia Street, Mobile, Alabama, 36603. All persons having any claims for labor, material or otherwise in connection with this project should immediately notify the Architectural Engineering Department, City of Mobile, P. O. Box 1827, Mobile, Alabama 36633-1827.

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Publication of the Notice of Completion shall not begin until the Project has been accepted as Substantially Complete by the City of Mobile. »

ARTICLE 6 DISPUTE RESOLUTION

§ 6.1 Initial Decision Maker

The Architect will serve as the Initial Decision Maker pursuant to Article 15 of AIA Document A201, unless the parties appoint below another individual, not a party to this Agreement, to serve as the Initial Decision Maker.
(If the parties mutually agree, insert the name, address and other contact information of the Initial Decision Maker, if other than the Architect.)

«N/A »

§ 6.2 Binding Dispute Resolution

For any Claim, the method of binding dispute resolution shall be as follows:
(Check the appropriate box.)

[«X »] Litigation in a court of competent jurisdiction

§ 6.3 Governing Law and Venue

This Agreement shall be governed by the laws of the State of Alabama, and the appropriate venue of any actions arising out of this Agreement shall be a court of proper jurisdiction in Mobile, Alabama.

ARTICLE 7 TERMINATION OR SUSPENSION

§ 7.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A201, General Conditions of the Contract for Construction, including Owner's then-current modifications, a copy of which is incorporated in the contract documents and incorporated by reference herein as a part thereof.

§ 7.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A201, General Conditions of the Contract for Construction, including Owner's then-current modifications, a copy of which is incorporated in the contract documents and incorporated by reference herein as a part thereof.

ARTICLE 8 MISCELLANEOUS PROVISIONS

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A201 or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents. A copy of such amended, revised or supplemental provision is incorporated in the contract documents and hereby incorporated by reference herein as a part thereof.

§ 8.2 The Owner's representative:
(Name, address, email address, and other information)

«David M. Cordingly »
«Architectural Engineering Department »
«P.O. Box 1827 »
«Mobile, Alabama 36633-1827 »
«david.cordingly@cityofmobile.org »

§ 8.3 The Contractor's representative:
(Name, address, email address, and other information)

«Name »
«Address »
«Email »
«Other »

§ 8.4 Neither the Owner's nor the Contractor's representative shall be changed without ten (10) days' prior notice to the other party.

§ 8.5 Insurance and Bonds

§ 8.5.1 The Owner and the Contractor shall purchase and maintain insurance as set forth below:

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The Contractor shall purchase and maintain from a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located such insurance as will protect the Contractor from claims set forth below which may arise out of or result from the Contractor's operations be by the Contractor or by a Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

.1 Claims under workers' compensation, disability benefit and other similar employee benefit acts that are applicable to the Work to be performed;
.2 Claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;
.3 Claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor's employees;
.4 Claims for damages insured by usual personal injury liability coverage;
.5 Claims for damages, because of injury to or destruction of tangible property, including loss of use resulting therefrom;
.6 Claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle;
.7 Claims for bodily injury or property damage arising out of completed operations; and
.8 Claims involving contractual liability insurance applicable to the Contractor's obligations under Section 3.18 of the General Conditions of the Contract for Construction.

The Contractor shall take out and maintain during the life of the Contract no less than the following amounts of insurance with the City of Mobile named as an additional insured. Contractor shall submit a Certificate of Insurance. Insurance companies listed as the "Companies Affording Coverage" shall be authorized by the Secretary of the State of Alabama. Insurance produced out of the State of Alabama must be signed or counter signed by a licensed Agent of Alabama, with the Agent's name, address and telephone number typed or printed on the face of the Certificate of Insurance.

.1 Workmen's Compensation Insurance: - Statutory-amount and coverage as required by all applicable laws, rules or regulations of the State of Alabama and the United States of America, Including the U. S. Longshore and Harbor Workers Act and the Jones Act, if applicable.

.2 Employee's Liability Insurance shall be provided for limits of liability not less than:

A.	Bodily Injury by Accident	$1,000,000 each accident
B.	Bodily Injury by Disease	$1,000,000 each employee
C.	Bodily Injury by Disease	$1,000,000 each policy

.3 United States Longshoreman's Harbor Worker's Act.

.4 Jones Act Coverage (if applicable) placed either in the Workers Compensation or through the Marine General Liability.

.5 The Contractor shall provide Broad Form (commonly termed Comprehensive) General Liability Insurance (including premises-product-completed operations, independent contractors, and blanket contractual liability), specifically covering the obligations assumed by the Contractor for limits of liability not less than:

A.	Bodily Injury	$1,000,000 each person $1,000,000 each occurrence
B.	Property Damage	$1,000,000 each occurrence; or
C.	Bodily Injury and Property Damage	$1,000,000 combined single limit
D.	Damage to Rented Premises	$1,000,000 each occurrence

.6 Such comprehensive policy shall include the following:

A. All liability of the Contractor, for the Contractor's Direct Operations.

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B. Subcontractor's Operations.
C. Completed Operations Cover, thereby meaning any loss which shall occur after the contract has been completed, but which can be traced back to the Contract.
D. General Aggregate Limit of $2,000,000 shall apply on a "Per Project" Basis.
E. Contractual Liability, meaning thereby; any risk assumed by the Contractor under Hold Harmless Agreements or any other assumption of liability, but specifically items 11.1.1.8.3G herein below
F. Broad Form Property Damage Coverage, including Completed Operations.
G. Personal Injury Liability, with employee's exclusions removed.
H. Explosion and Collapse Hazard:
Included or X Not Applicable.
I. Underground Hazard:
Included or X Not Applicable.

.7 The Contractor shall carry for himself and shall require that all Subcontractors and all Owners of Automobiles or trucks rented or hired on the contract carry, until the Contracts is completed, Comprehensive Automobile Liability Coverage for Bodily Injury and property. Damage for any auto in amounts not less than the minimum amounts as indicated. The Contractor and Subcontractor shall also carry for themselves insurance for all non-owned and hired automobile at the limits of liability as indicated below:

A.	Bodily Injury	$1,000,000 each person $1,000,000 each occurrence
B.	Property damage	$1,000,000 each occurrence; or,
C.	Bodily Injury and Property damage	$1,000,000 combined single limit

.8 Umbrella/Excess Liability: $2,000,000 combined single limit each occurrence for bodily injury and/or property damage

.9 Builder's Risk Coverage (Property Insurance): The Contractor shall carry for the Owner, himself, and all Subcontractors a Builder's Risk Policy to cover the full amount of the Contract during construction, fabrication or erection of any equipment.

A. The Contractor shall purchase and maintain, in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located, property insurance written on a builder's risk "all-risk" or equivalent policy form in the amount of the initial Contract Sum, plus value of subsequent Contract Modifications and cost of materials supplied or installed by others, comprising total value for the entire Project at the site on a replacement cost basis. Such property insurance shall be maintained, unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until final payment has been made as provided in Section 9.10 or until no person or entity other than the Owner has an insurable interest in the property, whichever is later. This insurance shall include interests of the Owner, the Contractor, Subcontractors, Sub-subcontractors, and the Design Professionals in the Project.

B. Property insurance shall be on an "all-risk" or equivalent policy form and shall include, without limitation, insurance against the perils of fire (with extended coverage) and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, collapse, windstorm, falsework, testing and startup, temporary buildings and debris removal including demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for Architect's and Contractor's services and expenses required as a result of such insured loss.

C. If the property insurance requires deductibles, the Contractor shall pay costs not covered because of such deductibles. Deductibles shall be limited to a maximum of $2,500.00 unless the loss is caused by windstorm; then deductible shall be a maximum of three percent (3%)

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of the insured value.

D. This property insurance shall cover the full value of equipment, material, and other portions of the Work stored off the site, and also portions of the Work in transit. There shall be no limits on the value of loss per occurrence.

E. A named storm endorsement is required. The deductible shall be a maximum of three percent (3%) of the insured value.

.10 A Surety authorized to do business in the State of Alabama shall furnish the required Insurance.

.11 The standard ACORD™ format shall be provided. The ACORD™ Certificate must be signed or countersigned by a Licensed Resident Agent of the State of Alabama and the agent's name, address and telephone number must appear on the face of the certificate.

.12 The Surety must have a minimum rating of A/Class VI as reported in the latest issue of Best's Key Rating Guide Property-Casualty, published by Alfred M. Best Company, Inc. if the bid price exceeds $50,000.00.

.13 "In Rem" endorsement.

The insurance shall be written for not less than limits of liability specified in the Contract Documents or required by law, whichever coverage is greater. Coverages, whether written on an occurrence or claims-made basis, shall be maintained without interruption from the date of commencement of the Work until the date of final payment and termination of any coverage required to be maintained after final payment, and, with respect to the Contractor's completed operations coverage, until the expiration of the period for correction of Work or for such other period for maintenance of completed operations coverage as specified in the Contract Documents.

Certificates of insurance acceptable to the Owner shall be filed with the Owner within ten (10) calendar days from date of issuance of contract forms for execution. Contractor shall deliver to the City of Mobile, certificates of insurance certifying the existence and limits of the insurance coverages along with separate policy endorsements. Contractor shall also be responsible for delivering policy renewal certificates to the City of Mobile, and thereafter upon renewal or replacement of each required policy of insurance. These certificates and the insurance policies shall contain a provision that coverages afforded under the policies will not be cancelled subject to non-renewal nor material change, or allowed to expire without at least thirty (30) days' (except ten (10) days from non-payment) prior written notice has been given to the Owner. An additional certificate evidencing continuation of liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment and thereafter upon renewal or replacement of such coverage until the expiration of the time. Information concerning reduction of coverage on account of revised limits or claims paid under the General Aggregate, or both, shall be furnished by the Contractor with reasonable promptness.

All policies of insurance, except worker's compensation, shall be endorsed to provide that all such insurances are primary and non-contributing with any other insurance maintained by the City of Mobile and endorsed to waive rights of subrogation in favor of the City of Mobile.

The Contractor shall cause the commercial liability coverage required by the Contract Documents to include (1) the Owner, the Architect and the Architect's Consultants as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's completed operations.

§ 8.5.2 The Contractor shall provide bonds as set forth below:
Contractor shall furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder.

Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

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The Labor and Material Payment Bond and the Performance Bond shall each be for one hundred percent (100%) of the Contract Sum.

1. Bond shall be submitted with the executed agreement on provided form(s).

2. Power of Attorney is required for both bonds.

3. A Surety authorized to do business in the State of Alabama shall furnish both bonds.

4. A Surety licensed to do business in the State of Alabama must execute the bonds.

5. The Surety must have a minimum rating of A/Class VI as reported in the latest issue of Best's Key Rating Guide Property-Casualty, published by Alfred M. Best Company, Inc., if the bid price exceeds $50,000.00.

6. The Surety company shall be required to execute AIA Document G-707, "Consent of Surety to Final Payment" prior to Final Payment being made to the Contractor.

§ 8.6 Indemnification:
Contractor shall indemnify, defend and hold harmless City and its officers, elected officials, agents, representatives, and employees in respect of any and all claims, injuries, losses, diminution in value, damages, liabilities, whether or not currently due, and related expenses (including without limitation, settlement costs and any legal or other expenses for investigating or defending any actions or threatened actions) arising from or in connection with Contractor's performance under this agreement, including but not limited to, environmental laws, regulations, orders and decrees of whatever character or nature and damage or injury to persons or property. Contractor hereby confirms and agrees that Contractor is not a 'design professional' as defined in Alabama Act 2021-318, and not required to carry professional liability insurance for the performance or obligations of this contract.

§ 8.7 Other provisions:

« Contractor shall provide a minimum one (1) years warranty from the date of substantial completion of all Labor and Materials for the Work covered by this contract, unless otherwise specified. Labor and Material warranties required by other sections of the construction document shall not conflict with this provision. The most stringent warranty provision shall apply. »

§ 8.8 Force Majeure:
In the event that either party hereto shall be delayed or hindered in or prevented from the performance of any act required hereunder by reason of strikes, lockouts, labor troubles, inability to procure materials, failure of power, restrictive governmental laws or regulations, riots, insurrection, war, Act of God, or other reason of a like nature not the fault of the party delayed in performing work or doing acts required under the terms of this Agreement, then performance of such act shall be excused for the period of the delay and the period for the performance of any such act shall be extended for a period equivalent to the period of such delay.

ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 This Agreement is comprised of the following documents:

.1 AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor

.2 AIA Document A201, General Conditions of the Contract for Construction, including Owner's then-current modifications, a copy of which is incorporated in the contract documents and incorporated by reference herein as a part thereof.

.3 Drawings

Number	Title	Date

.4 Specifications

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Section	Title	Date

.5 Addenda, if any:

Number	Date

Portions of Addenda relating to bidding or proposal requirements are not part of the Contract Documents unless the bidding or proposal requirements are also enumerated in this Article 9.

.6 Other Exhibits:

§ 9.2
Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages
N/A			

§ 9.2.1 Other documents, if any, listed below:

(List here any additional documents that are intended to form part of the Contract Documents. AIA Document A201™–2017 provides that the advertisement or invitation to bid, Instructions to Bidders, sample forms, the Contractor's bid or proposal, portions of Addenda relating to bidding or proposal requirements, and other information furnished by the Owner in anticipation of receiving bids or proposals, are not part of the Contract Documents unless enumerated in this Agreement. Any such documents should be listed here only if intended to be part of the Contract Documents.)

«BIDDING AND CONTRACT REQUIREMENTS

Section 00 1116	Invitation to Bid
Section 00 2100	Instructions to Bidders - AIA Document A701-2018
Section 00 2200	Supplementary Instructions to Bidders
Section 00 4100	Bid Form
	City of Mobile Subcontracting & Major Supplier Plan
Section 00 5000	Standard Form of Agreement Between Owner and Contractor AIA Document A101
Section 00 6000	Bonds, Certificates and Affidavits
	Performance Bond
	Labor and Material Payment Bond
	E-Verify Documentation (Sample)
	Application and Certificate for Payment - AIA Document G702and G703 with DBE City of Mobile DBE Utilization Report
	Certificate of Substantial Completion - AIA Document G704
	Contractor's Affidavit of Payment of Debts and Claims - AIA Document G706
	Contractor's Affidavit of Release of Liens - AIA Document G706A
	Consent of Surety to Final Payment - AIA Document G707
	Request for Taxpayer Identification Number and Certification W9 Tax Form and City of Mobile Vendor Information Form
Section 00 7000	General Conditions of the Contract for Construction - AIA Document A201»

§ 9.2.2 Best Management Practices (BMPs): The Contractor shall be responsible for providing, implementing and maintaining BMPs for sediment and erosion control in full compliance with all applicable Local, State and Federal Codes and Ordinances throughout the contract period. All Work shall be in accordance with the Clean Water Act; the Alabama Water Pollution Control Act; the current version of the Alabama Handbook for Erosion Control, Sediment Control Storm water Management on Construction sites and Urban Areas; and the current version of the Mobile, Alabama City Code Chapter 17 Storm water Management and Flood Control. All Wastewater with oils, grease, paint, mortar, etc., shall be properly contained and disposed of.

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§ 9.2.3 Contractor shall comply with all Federal, State and local laws concerning nondiscrimination, including but not limited to City of Mobile Ordinance No. 14-034 which requires, *inter alia*, that all contractors performing work for the City of Mobile not discriminate on the basis of race, creed, color, national origin or disability, require that all subcontractors they engage do the same, and make every reasonable effort to assure that fifteen percent of the work performed under contract be awarded to socially and economically disadvantaged individuals and business entities.

§ 9.2.4 By signing this contract, the contracting parties affirm, for the duration of the agreement, that they will not violate federal immigration law or knowingly employ, hire for employment, or continue to employ an unauthorized alien within the State of Alabama. Furthermore, a contracting party found to be in violation of this provision shall be deemed in breach of the agreement and shall be responsible for all damages resulting therefrom.

§ 9.2.5 Public Contracts with Entities Engaging in certain Boycott Activities:
By signing this contract, the Contractor further represents and agrees that it is not currently engaged in, nor will it engage in, any boycott of a person or entity based in or doing business with a jurisdiction with which the State of Alabama can enjoy open trade.

§ 9.2.6 Severability Clause:
In case any one or more of the provisions contained in this Agreement shall for any reason be held to be invalid, illegal or unenforceable in any respect, such invalidity, illegality or unenforceability shall not affect any other provisions of this Agreement, but this Agreement shall be construed as if such invalid or illegal or unenforceable provision had never been contained herein. Upon such determination that any term or other provision is invalid, illegal or unenforceable, the court or other tribunal making such determination is authorized and instructed to modify this Agreement so as to effect the original intent of the parties as closely as possible so that the transactions and agreements contemplated herein are consummated as originally contemplated to the fullest extent possible.

§ 9.2.7 Non-Agency Clause:
Contractor, in the performance of its operations and obligations hereunder, shall not be deemed to be an agent of City but shall be deemed to be an independent Contractor in every respect and shall take all steps at its own expense, as City may from time to time request, to indicate that it is an independent Contractor. City does not and will not assume any responsibility for the means by which or the manner in which the services by Contractor provided for herein are performed, but on the contrary, Contractor shall be wholly responsible therefore.

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User Notes: (1987471724)

This Agreement entered into as of the day and year first written above.

Owner: City of Mobile	Legal Name of Party to Contract: Contractor: <Name of Contractor>
OWNER *(Signature)*	**CONTRACTOR** *(By Signature)*
William S. Stimpson, Mayor *(Printed name and title)*	<Name of person signing form> *(Printed name and title)*

ATTEST:

_____
City Clerk

STATE OF _____
COUNTY OF _____

Before me, the undersigned a Notary Public in and for said County and State, personally appeared <Individual NAME> as <Title within Company> of <Company Legal Name> and after being duly sworn, did depose and say that he, as such officer and with full authority, signed the above and foregoing voluntarily as the act of said corporation on the day the same bears date.
Sworn to and subscribed for me this _____ day of _____, 20_____.

_____
NOTARY PUBLIC
My Commission Expires: _____

DRAFT

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User Notes: (1987471724)

SECTION 00 6000 - BONDS, CERTIFICATES, AND AFFIDAVITS

PART 1 – GENERAL

This section includes the Bond Forms and Certificates that are to be used on this Project. No other forms will be accepted. Forms may be obtained from the Architectural Engineering Department, City of Mobile, telephone number 251-208-7454.

1.1 FORMS

A. PERFORMANCE BOND. Owner's modified Performance Bond form.

B. LABOR AND MATERIAL PAYMENT BOND. Owner's modified Payment Bond form.

C. E-Verify Documentation (Sample)

D. APPLICATION AND CERTIFICATION FOR PAYMENT - AIA Document G702 and AIA Document G703

E. CERTIFICATE of SUBSTANTIAL COMPLETION – AIA Document G704-2017

F. CONTRACTOR'S AFFIDAVIT OF PAYMENT OF DEBTS AND CLAIMS - AIA Document G706

G. CONTRACTOR'S AFFIDAVIT OF RELEASE OF LIENS - AIA Document G706A.

H. CONSENT OF SURETY TO FINAL PAYMENT - AIA Document G707

I. Request for Taxpayer Identification Number and Certification, W-9 Form, and City of Mobile Vendor Information Form

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 00 6000

PERFORMANCE BOND

Any singular reference to Contractor, Surety, Owner or other Party shall be considered plural where applicable.

KNOW ALL MEN BY THESE PRESENTS: That the Contractor, _____, _____, _____ hereinafter called the Principal, and _____ _____, hereinafter called the Surety, are held and firmly bound unto the **City of Mobile, P. O. Box 1827, Mobile, AL 36633**, hereinafter called the Owner, in the penal sum of _____ _____Dollars ($_____.00) for payment of which we bind ourselves, our heirs, executors, administrators, successors, and assigns for the faithful performance of a certain written Contract dated the _____ day of _____, 2025 entered into between the Principal and the City of Mobile for furnishing all labor, material, equipment and insurance and performing all Work required to properly complete **MPD TRAFFIC SAFETY UNIT - EMERGENCY GENERATOR (PD-003-25), 850 Virginia Street, Alabama 36603**, a copy of which said Contract is incorporated herein by reference and is made a part hereof as if fully copied herein.

NOW, THEREFORE, the condition of this obligation is such that if the Principal shall faithfully perform the terms and conditions of the Contract in all respects on its part and shall fully pay all obligations incurred in connection with the performance of such Contract on account of labor and materials used in connection therewith, and all such other obligations of every form, nature and character, and shall save harmless the Owner from all and any liability of every nature, kind and character which may be incurred in connection with the performance or fulfillment of such Contract or other such and liability resulting from negligence or otherwise on the part of such Principal and further save harmless the Owner from all cost and damage which may be suffered by reason of the failure to fully and completely perform said contract and shall fully reimburse and repay the Owner for all expenditures of every kind, character, and description which may be incurred by the Owner in making good any and every default which may exist on the part of the Principal in connection with the performance of said Contract; and further that the Principal shall pay all lawful claims of all persons, firms, partnerships, or corporations for all labor performed and material furnished in connection with the performance of the Contract, and that the failure to do so with such persons, firms, partnerships or corporations shall give them a direct obligation; and provided, however, that no suit, action, or proceedings by reason of any default whatever shall be brought on this bond after two years from the date on which the final payment on the Contract falls due, and provided, further, that if any alterations or additions which may be made under the Contract, or in the work to be done under it, or the giving by the Owner of any extensions of time for the performance of the Contract or any other forbearance being expressly waived. This obligation shall remain in full force and effect until the performance of all covenants, terms and conditions herein stipulated and after such performance, it shall become null and void.

In addition to any other legal mode of service, service of summons, and other process in civil actions brought in Mobile County may be had on the Contractor or the Surety on the bond by leaving a copy of the summons and complaint or other pleading or process with the Mayor of the City of Mobile which shall bind the principal Contractor and Surety to the mode of service above described and that the service shall be the same as personal service on the contractor or surety. This Bond is given pursuant to the terms of Alabama Code, Title 39-1-1, et. al., As Amended.

EXECUTED IN FOUR (4) COUNTERPARTS.

SIGNED, SEALED AND DELIVERED this ____ day of _____, 2025.

CONTRACTOR AS PRINCIPAL
Company:_____
(Corporate Seal)

By: _____
(Signature)

Name and Title: _____

SURETY
Company:_____
(Corporate Seal)

By: _____
(Signature)

Name and Title: _____

Resident Agent: _____
(Signature)
Name and Title: _____
Company Name:_____
Address: _____
_____
Phone and Fax: _____

Owner's Representative: Architectural Engineering Department
PO Box 1827
Mobile, AL 36633
251-208-7454

LABOR AND MATERIAL PAYMENT BOND

Any singular reference to Contractor, Surety, Owner or other Party shall be considered plural where applicable.

KNOW ALL MEN BY THESE PRESENTS: That the Contractor, _____, _____ , as Principal, and _____, as Surety, are held and firmly bound unto the **City of Mobile, P. O. Box 1827, Mobile, AL 36633** (hereinafter called the "Obligee") in the penal sum of _____ Dollars and no/cents ($_____.00) lawful money of the United States, for the payment of which sum well and truly to be made we bind ourselves, our heirs, personal representatives, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, said Principal has entered into a certain Contract with said Obligee, dated the ____ day of _____, 2025, (hereinafter called the "Contract") for furnishing all labor, material, equipment and insurance and perform all work required to properly complete **MPD TRAFFIC SAFETY UNIT - EMERGENCY GENERATOR (PD-003-25), 850 Virginia Street, Alabama 36603**, which, **THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH** that if said Principal and all subcontractors to whom any portion of work provided for in said Contract is sublet and all assignees of said Principal and of such subcontractors shall promptly make payments to all persons supplying him or them with labor, materials or supplies for or in the prosecution of the work provided for in such Contract, or in any amendment or extension of or additions to said Contract, and for the payment of reasonable attorney's fees, incurred by the claimant or claimants in suits on each bond, then the above obligations shall be void; otherwise to remain in full force and effect. **PROVIDED,** however, that this bond is subject to the following conditions and limitations.

(a) Any person, firm or corporation that has furnished labor, materials or supplies for or in the prosecution of the work provided for in said contract shall have a direct right of action against the Principal and Surety on this bond, which right of action shall be asserted in a proceeding instituted in the County in which the work provided for in said Contract is to be performed or in any county in which said Principal and Surety does business. Such right of action shall be asserted in a proceeding instituted in the name of the claimant or claimants for his or their use and benefit against said Principal and Surety or either of them (but not later than one year after the final settlement of said Contract) in which action such claim or claims shall be adjudicated and judgment rendered thereon.

(b) The Principal and Surety hereby designate and appoint **_____ Attorney-In-Fact,** as the agent of each of them to receive and accept service of process or other pleading issued or filed in any proceeding instituted on this bond and hereby consent that such service shall be the same as personal service on the Principal and/or Surety. In addition to any other legal mode of service, service of summons, and other process in civil actions brought in Mobile County may be had on the Contractor or the Surety on the bond by leaving a copy of the summons and complaint or other pleading or process with the Mayor of the City of Mobile which shall bind the principal Contractor and Surety to the mode of service above described and that the service shall be the same as personal service on the contractor or surety.

(c) The Surety shall not be liable hereunder for damage or compensation recoverable under any Workmen's Compensation or Employer's Liability Statute.

(d) In no event shall the Surety be liable for a greater sum than the penalty of this bond, or subject to any suit, action or proceeding thereon that is instituted later than two years after the final settlement of said Contract.

(e) This bond is given pursuant to the terms of Alabama Code, Title 39-1-1, et. al., As Amended.

EXECUTED IN FOUR (4) COUNTERPARTS.

SIGNED, SEALED AND DELIVERED this ____ day of _____, 2025

CONTRACTOR AS PRINCIPAL	**SURETY**
Company:_____ (Corporate Seal)	Company: _____ (Corporate Seal)
By: _____ (Signature)	By: _____ (Signature)
Name and Title: Brian Harris, President	Name and Title:_____

Resident Agent: _____ (Signature)
Name and Title: _____
Company Name: _____
Address: _____
_____
Phone and Fax: _____

Owner's Representative: Architectural Engineering Department
PO Box 1827
Mobile, AL 36633
251-208-7454

Company ID Number:

Information Required for the E-Verify Program **Information relating to your Company:**	
Company Name	
Company Facility Address	
Company Alternate Address	
County or Parish	
Employer Identification Number	
North American Industry Classification Systems Code	
Parent Company	
Number of Employees	
Number of Sites Verified for	

SAMPLE

APPLICATION AND CERTIFICATION FOR PAYMENT

AIA DOCUMENT G702 PAGE ONE OF PAGES

TO OWNER City of Mobile
P. O. Box 1827
Mobile, AL 36633-1827

PROJECT:

APPLICATION NO:

Distribution to:
☐ OWNER
☐ ARCHITECT
☐ CONTRACTOR
☐
☐

PERIOD TO:

FROM CONTRACTOR:

VIA ARCHITECT:

PROJECT NO:

CONTRACT FOR:

CONTRACT DATE:

CONTRACTOR'S APPLICATION FOR PAYMENT

Application is made for payment, as shown below, in connection with the Contract.
Continuation Sheet, AIA Document G703, is attached.

1. ORIGINAL CONTRACT SUM		$
2. Net change by Change Orders		$
3. CONTRACT SUM TO DATE (Line 1 ± 2)		$
4. TOTAL COMPLETED & STORED TO DATE (Column G on G703)		$
5. RETAINAGE:		
a. ____ % of Completed Work (Column D + E on G703)	$	
b. ____ % of Stored Material (Column F on G703)	$	
Total Retainage (Lines 5a + 5b or Total in Column I of G703)		$
6. TOTAL EARNED LESS RETAINAGE (Line 4 Less Line 5 Total)		$
7. LESS PREVIOUS CERTIFICATES FOR PAYMENT (Line 6 from prior Certificate)		$
8. CURRENT PAYMENT DUE		$
9. BALANCE TO FINISH, INCLUDING RETAINAGE (Line 3 less Line 6)		$

CHANGE ORDER SUMMARY	ADDITIONS	DEDUCTIONS
Total changes approved in previous months by Owner		
Total approved this Month		
TOTALS		
NET CHANGES by Change Order		

The undersigned Contractor certifies that to the best of the Contractor's knowledge, information and belief the Work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for Work for which previous Certificates for Payment were issued and payments received from the Owner, and that current payment shown herein is now due.

CONTRACTOR:

By: _____ Date: _____

State of: County of:
Subscribed and sworn to before me this day of
Notary Public:
My Commission expires:

ARCHITECT'S CERTIFICATE FOR PAYMENT

In accordance with the Contract Documents, based on on-site observations and the data comprising the application, the Architect certifies to the Owner that to the best of the Architect's knowledge, information and belief the Work has progressed as indicated, the quality of the Work is in accordance with the Contract Documents, and the Contractor is entitled to payment of the AMOUNT CERTIFIED.

AMOUNT CERTIFIED . . . . . $ _____

(Attach explanation if amount certified differs from the amount applied. Initial all figures on this Application and onthe Continuation Sheet that are changed to conform with the amount certified.)

ARCHITECT:

By: _____ Date: _____

This Certificate is not negotiable. The AMOUNT CERTIFIED is payable only to the Contractor named herein. Issuance, payment and acceptance of payment are without prejudice to any rights of the Owner or Contractor under this Contract.

AIA DOCUMENT G702 · APPLICATION AND CERTIFICATION FOR PAYMENT · 1992 EDITION · AIA · ©1992 THE AMERICAN INSTITUTE OF ARCHITECTS, 1735 NEW YORK AVE., N.W., WASHINGTON, DC 20006-5292

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CONTINUATION SHEET

AIA DOCUMENT G703

PAGE OF PAGES

AIA Document G702, APPLICATION AND CERTIFICATION FOR PAYMENT, containing Contractor's signed certification is attached.

In tabulations below, amounts are stated to the nearest dollar.

Use Column I on Contracts where variable retainage for line items may apply.

APPLICATION NO:
APPLICATION DATE:
PERIOD TO:
ARCHITECT'S PROJECT NO:

A	B	C	D	E	F	G		H	I
ITEM NO.	DESCRIPTION OF WORK	SCHEDULED VALUE	WORK COMPLETED FROM PREVIOUS APPLICATION (D + E)	WORK COMPLETED THIS PERIOD	MATERIALS PRESENTLY STORED (NOT IN D OR E)	TOTAL COMPLETED AND STORED TO DATE (D+E+F)	% (G ÷ C)	BALANCE TO FINISH (C - G)	RETAINAGE (IF VARIABLE RATE)
	GRAND TOTALS								

Users may obtain validation of this document by requesting of the license a completed AIA Document D401 - Certification of Document's Authenticity

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THE AMERICAN INSTITUTE OF ARCHITECTS, 1735 NEW YORK AVENUE, N.W. WASHINGTON, D.C. 20006-5232

OFFICE OF SUPPLIER DIVERSITY

CITY OF MOBILE

DBE Compliance

DBE UTILIZATION REPORT

Return to Office of Supplier Diversity
Via email: archnique.kidd@cityofmobile.org
or
P.O. Box 1948
Mobile, AL 36633

CONTRACTOR:	Certified DBE: YES NO	Contract Start Date:
DESCRIPTION:		Estimated Completion Date:

This report is for the month of: (CHECK ONE):

JAN FEB MARCH APR MAY JUNE JULY AUG SEPT OCT NOV DEC

FINAL _____

Original Contract Amount	Total Amount of Contract Changes (change orders or amendments)	Final Contract Amount (include contract changes)	Payments to Date from City of Mobile	OFFICE USE ONLY (Verification)
$	$	$	$	

Instructions: List all DBEs utilized on the contract, whether or not the firms were originally listed for DBE goal credit. List actual amount paid to each DBE firm. If the established Percentage is not being met, please include a narrative description of the progress being made in DBE participation.

DBE SUBCONTRACTOR	DBE DESCRIPTION OF WORK	DBE SUBCONTRACT AMOUNT	DBE PAYMENTS THIS REPORT	PAYMENTS TO DATE	OFFICE USE ONLY (Verification)
		$	$	$	
		$	$	$	
		$	$	$	
		$	$	$	
TOTALS		$	$	$	

I HEREBY CERTIFY THAT THE INFORMATION CONTAINED HEREIN IS TRUE AND CORRECT. SUPPORTING DOCUMENTATION IS ON FILE AND IS AVAILABLE FOR INSPECTION BY CITY OF MOBILE OFFICE OF SUPPLIER DIVERSITY PERSONNEL AT ANY TIME.

PRINT NAME: _____

SIGNATURE: _____, _____ ___/___/____
(Title) (Date)

AIA® Document G704™ – 2000

Certificate of Substantial Completion

PROJECT: *(Name and address)*

PROJECT NUMBER:

CONTRACT FOR:

CONTRACT DATE:

OWNER ☐
ARCHITECT ☐
CONTRACTOR ☐
FIELD ☐
OTHER ☐

TO OWNER: *(Name and address)*

TO CONTRACTOR: *(Name and address)*

PROJECT OR PORTION OF THE PROJECT DESIGNATED FOR PARTIAL OCCUPANCY OR USE SHALL INCLUDE:

The Work performed under this Contract has been reviewed and found, to the Architect's best knowledge, information and belief, to be substantially complete. Substantial Completion is the stage in the progress of the Work when the Work or designated portion is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use. The date of Substantial Completion of the Project or portion designated above is the date of issuance established by this Certificate, which is also the date of commencement of applicable warranties required by the Contract Documents, except as stated below:

ARCHITECT | BY | DATE OF ISSUANCE

A list of items to be completed or corrected is attached hereto. The failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents. Unless otherwise agreed to in writing, the date of commencement of warranties for items on the attached list will be the date of issuance of the final Certificate of Payment or the date of final payment.

Cost estimate of Work that is incomplete or defective: **$** _____

The Contractor will complete or correct the Work on the list of items attached hereto within ( ) days from the above date of Substantial Completion.

CONTRACTOR | BY | DATE

The Owner accepts the Work or designated portion as substantially complete and will assume full possession at (*time*) on (*date*).

OWNER | BY | DATE

The responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance shall be as follows: *(Note: Owner's and Contractor's legal and insurance counsel should determine and review insurance requirements and coverage.)*

Sample

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AIA® Document G706™ – 1994

Contractor's Affidavit of Payment of Debts and Claims

PROJECT: *(Name and address)*	**ARCHITECT'S PROJECT NUMBER:**	OWNER: ☐ ARCHITECT: ☐
	CONTRACT FOR: General Construction	CONTRACTOR: ☐
TO OWNER: *(Name and address)*	**CONTRACT DATED:**	SURETY: ☐ OTHER: ☐

STATE OF:
COUNTY OF:

The undersigned hereby certifies that, except as listed below, payment has been made in full and all obligations have otherwise been satisfied for all materials and equipment furnished, for all work, labor, and services performed, and for all known indebtedness and claims against the Contractor for damages arising in any manner in connection with the performance of the Contract referenced above for which the Owner or Owner's property might in any way be held responsible or encumbered.

EXCEPTIONS:

SUPPORTING DOCUMENTS ATTACHED HERETO:

1. Consent of Surety to Final Payment. Whenever Surety is involved, Consent of Surety is required. AIA Document G707, Consent of Surety, may be used for this purpose

Indicate Attachment ☐ Yes ☒ No

The following supporting documents should be attached hereto if required by the Owner:

1. Contractor's Release or Waiver of Liens, conditional upon receipt of final payment.

2. Separate Releases or Waivers of Liens from Subcontractors and material and equipment suppliers, to the extent required by the Owner, accompanied by a list thereof.

3. Contractor's Affidavit of Release of Liens (AIA Document G706A).

CONTRACTOR: *(Name and address)*

BY: _____
(Signature of authorized representative)

_____
(Printed name and title)

Subscribed and sworn to before me on this date:

Notary Public:
My Commission Expires:

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User Notes: (1147552344)

AIA® Document G706A™ – 1994

Contractor's Affidavit of Release of Liens

PROJECT: *(Name and address)*	**ARCHITECT'S PROJECT NUMBER:**	OWNER: ☐
		ARCHITECT: ☐
	CONTRACT FOR: General Construction	CONTRACTOR: ☐
TO OWNER: *(Name and address)*	**CONTRACT DATED:**	SURETY: ☐
		OTHER: ☐

STATE OF:
COUNTY OF:

The undersigned hereby certifies that to the best of the undersigned's knowledge, information and belief, except as listed below, the Releases or Waivers of Lien attached hereto include the Contractor, all Subcontractors, all suppliers of materials and equipment, and all performers of Work, labor or services who have or may have liens or encumbrances or the right to assert liens or encumbrances against any property of the Owner arising in any manner out of the performance of the Contract referenced above.

EXCEPTIONS:

SUPPORTING DOCUMENTS ATTACHED HERETO:

1. Contractor's Release or Waiver of Liens, conditional upon receipt of final payment.

2. Separate Releases or Waivers of Liens from Subcontractors and material and equipment suppliers, to the extent required by the Owner, accompanied by a list thereof.

CONTRACTOR: *(Name and address)*

BY:

(Signature of authorized representative)

(Printed name and title)

Subscribed and sworn to before me on this date:

Notary Public:
My Commission Expires:

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AIA® Document G707™ – 1994

Consent Of Surety to Final Payment

PROJECT: *(Name and address)*	**ARCHITECT'S PROJECT NUMBER:**	OWNER: ☐
	CONTRACT FOR: General Construction	ARCHITECT: ☐
		CONTRACTOR: ☐
TO OWNER: *(Name and address)*	**CONTRACT DATED:**	SURETY: ☐
		OTHER: ☐

In accordance with the provisions of the Contract between the Owner and the Contractor as indicated above, the
(Insert name and address of Surety)

, SURETY,

on bond of
(Insert name and address of Contractor)

, CONTRACTOR,

hereby approves of the final payment to the Contractor, and agrees that final payment to the Contractor shall not relieve the Surety of any of its obligations to
(Insert name and address of Owner)

, OWNER,

as set forth in said Surety's bond.

IN WITNESS WHEREOF, the Surety has hereunto set its hand on this date:
(Insert in writing the month followed by the numeric date and year.)

_____
(Surety)

_____
(Signature of authorized representative)

Attest:
(Seal):

_____
(Printed name and title)

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User Notes: (1299870031)

CITY OF MOBILE, AL
VENDOR INFORMATION FORM

Company Information:

1. City Vendor Number:

2. Name of Company:

3. Company D.B.A. Name, if any:

4. Mailing Address:

5. Remittance Address:

6. Telephone:

7. Fax

8. Main Email:

Primary Contact:

9. Contact Name and Title:

10. Contact Phone:

11. Contact Fax:

12. Contact Email:

Alternate Contact (if applicable):

13. Alt. Contact Name and Title:

14. Alt. Contact Phone:

15. Alt. Contact Fax:

16. Alt. Contact Email:

City of Mobile Business License Information:

17. City of Mobile Business License No. (if required):

Please attach additional sheets if necessary.

ELECTRONIC PAYMENT AUTHORIZATION

I authorize the City of Mobile to pay amounts owed to my company by EFT (electronic funds transfer). In the event of any discrepancy, the City has the authority to reverse the payment and debit my account for the incorrect payment amount.

All fields are required to be completed.

Company Name _____

City Vendor No. *(if available)* _____ Tax Identification No. _____

Billing Address _____

City State Zip _____

EFT Contact Person _____

EFT Contact Phone _____

EFT Contact Email _____
(required for EFT payment notification emails)

Bank Name _____

Routing Number _____ Account Number _____

Account Type ☐ Checking or ☐ Savings

Authorized Official (print) _____

Authorized Official (signature)_____ Date _____

For City Use Only: Vendor No._____ Entered Date _____

Form **W-9**
(Rev. December 2014)
Department of the Treasury
Internal Revenue Service

Request for Taxpayer Identification Number and Certification

Give Form to the requester. Do not send to the IRS.

Print or type
See Specific Instructions on page 2.

1 Name (as shown on your income tax return). Name is required on this line; do not leave this line blank.

2 Business name/disregarded entity name, if different from above

3 Check appropriate box for federal tax classification; check only **one** of the following seven boxes:

☐ Individual/sole proprietor or single-member LLC ☐ C Corporation ☐ S Corporation ☐ Partnership ☐ Trust/estate

☐ Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=partnership) ▶ _____

Note. For a single-member LLC that is disregarded, do not check LLC; check the appropriate box in the line above for the tax classification of the single-member owner.

☐ Other (see instructions) ▶

4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3):

Exempt payee code (if any) _____

Exemption from FATCA reporting code (if any) _____

(Applies to accounts maintained outside the U.S.)

5 Address (number, street, and apt. or suite no.)

Requester's name and address (optional)

6 City, state, and ZIP code

7 List account number(s) here (optional)

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the Part I instructions on page 3. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN* on page 3.

Note. If the account is in more than one name, see the instructions for line 1 and the chart on page 4 for guidelines on whose number to enter.

Social security number

			–			–				

or

Employer identification number

		–							

Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
3. I am a U.S. citizen or other U.S. person (defined below); and
4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions on page 3.

Sign Here | **Signature of U.S. person** ▶ | **Date** ▶

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. Information about developments affecting Form W-9 (such as legislation enacted after we release it) is at *www.irs.gov/fw9*.

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following:

- Form 1099-INT (interest earned or paid)
- Form 1099-DIV (dividends, including those from stocks or mutual funds)
- Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
- Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
- Form 1099-S (proceeds from real estate transactions)
- Form 1099-K (merchant card and third party network transactions)
- Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)
- Form 1099-C (canceled debt)
- Form 1099-A (acquisition or abandonment of secured property)

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See *What is backup withholding?* on page 2.

By signing the filled-out form, you:

1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),
2. Certify that you are not subject to backup withholding, or
3. Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income, and
4. Certify that FATCA code(s) entered on this form (if any) indicating that you are exempt from the FATCA reporting, is correct. See *What is FATCA reporting?* on page 2 for further information.

SECTION 00 7000 - GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION

PART 1 – GENERAL

This section includes the GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION, AIA Document A-201, that is to be used for this Project. The document has been electronically modified to meet the City of Mobile's requirements and shall be used for the project.

DRAFT

AIA® Document A201® – 2017

General Conditions of the Contract for Construction

for the following PROJECT:
(Name and location or address)

«MPD TRAFFIC SAFETY UNIT – EMERGENCY GENERATOR »
«850 Virginia Street »
«Mobile, Alabama 36603 »
«Project No. PD-003-25 »

THE OWNER:
(Name, legal status and address)

«CITY OF MOBILE »
«P.O. Box 1827 »
«Mobile, Alabama 36633-1827 »
«Contact: David M. Cordingly »

THE ARCHITECT:
(Name, legal status and address)

«JAGUAR CONSULTING, LLC »
«8658 Capital Drive North »
«Mobile, Alabama 36695»
«Contact: Christina Marie »

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ADDITIONS AND DELETIONS: The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

For guidance in modifying this document to include supplementary conditions, see AIA Document A503™, Guide for Supplementary Conditions.

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ARTICLE 1 GENERAL PROVISIONS

§ 1.1 Basic Definitions

§ 1.1.1 The Contract Documents

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement, and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive, or (4) a written order for a minor change in the Work issued by the Architect. Unless specifically enumerated in the Agreement, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, or portions of Addenda relating to bidding or proposal requirements.

§ 1.1.2 The Contract

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Architect or the Architect's consultants, or (4) between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect's duties.

§ 1.1.3 The Work

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment, and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

§ 1.1.4 The Project

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner and by Separate Contractors.

§ 1.1.5 The Drawings

The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules, and diagrams.

§ 1.1.6 The Specifications

The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

§ 1.1.7 Instruments of Service

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

§ 1.1.8 Initial Decision Maker

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2. The Initial Decision Maker shall not show partiality to the Owner or Contractor and shall not be liable for results of interpretations or decisions rendered in good faith.

§ 1.2 Correlation and Intent of the Contract Documents

§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

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§ 1.2.1.1 The invalidity of any provision of the Contract Documents shall not invalidate the Contract or its remaining provisions. If it is determined that any provision of the Contract Documents violates any law, or is otherwise invalid or unenforceable, then that provision shall be revised to the extent necessary to make that provision legal and enforceable. In such case the Contract Documents shall be construed, to the fullest extent permitted by law, to give effect to the parties' intentions and purposes in executing the Contract.

§ 1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

§ 1.2.3 Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

§ 1.3 Capitalization

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles, or (3) the titles of other documents published by the American Institute of Architects.

§ 1.4 Interpretation

In the interest of brevity the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

§ 1.5 Ownership and Use of Drawings, Specifications, and Other Instruments of Service

§ 1.5.1 The Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and retain all common law, statutory, and other reserved rights in their Instruments of Service, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with the Project is not to be construed as publication in derogation of the Architect's or Architect's consultants' reserved rights.

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors, and suppliers are authorized to use and reproduce the Instruments of Service provided to them, subject to any protocols established pursuant to Sections 1.7 and 1.8, solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and suppliers may not use the Instruments of Service on other projects or for additions to the Project outside the scope of the Work without the specific written consent of the Owner, Architect, and the Architect's consultants.

§ 1.6 Notice

§ 1.6.1 Except as otherwise provided in Section 1.6.2, where the Contract Documents require one party to notify or give notice to the other party, such notice shall be provided in writing to the designated representative of the party to whom the notice is addressed and shall be deemed to have been duly served if delivered in person, by mail, by courier, or by electronic transmission if a method for electronic transmission is set forth in the Agreement.

§ 1.6.2 Notice of Claims as provided in Section 15.1.3 shall be provided in writing and shall be deemed to have been duly served only if delivered to the designated representative of the party to whom the notice is addressed by certified or registered mail, or by courier providing proof of delivery.

§ 1.7 Digital Data Use and Transmission

The parties shall agree upon protocols governing the transmission and use of Instruments of Service or any other information or documentation in digital form. The parties will use AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, to establish the protocols for the development, use, transmission, and exchange of digital data.

§ 1.8 Building Information Models Use and Reliance

Any use of, or reliance on, all or a portion of a building information model without agreement to protocols governing the use of, and reliance on, the information contained in the model and without having those protocols set forth in AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, and the requisite AIA Document

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G202™–2013, Project Building Information Modeling Protocol Form, shall be at the using or relying party's sole risk and without liability to the other party and its contractors or consultants, the authors of, or contributors to, the building information model, and each of their agents and employees.

ARTICLE 2 OWNER

§ 2.1 General

§ 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. Except as otherwise provided in Section 4.2.1, the Architect does not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

§ 2.1.2 The Owner shall furnish to the Contractor, within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate, give notice of, or enforce mechanic's lien rights. Such information shall include a correct statement of the record legal title to the property on which the Project is located, usually referred to as the site, and the Owner's interest therein.

§ 2.2 Evidence of the Owner's Financial Arrangements

§ 2.2.1 Prior to commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. The Contractor shall have no obligation to commence the Work until the Owner provides such evidence. If commencement of the Work is delayed under this Section 2.2.1, the Contract Time shall be extended appropriately.

§ 2.2.2 Following commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract only if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when due; or (3) a change in the Work materially changes the Contract Sum. If the Owner fails to provide such evidence, as required, within fourteen days of the Contractor's request, the Contractor may immediately stop the Work and, in that event, shall notify the Owner that the Work has stopped. However, if the request is made because a change in the Work materially changes the Contract Sum under (3) above, the Contractor may immediately stop only that portion of the Work affected by the change until reasonable evidence is provided. If the Work is stopped under this Section 2.2.2, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided in the Contract Documents.

§ 2.2.3 After the Owner furnishes evidence of financial arrangements under this Section 2.2, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

§ 2.2.4 Where the Owner has designated information furnished under this Section 2.2 as "confidential," the Contractor shall keep the information confidential and shall not disclose it to any other person. However, the Contractor may disclose "confidential" information, after seven (7) days' notice to the Owner, where disclosure is required by law, including a subpoena or other form of compulsory legal process issued by a court or governmental entity, or by court or arbitrator(s) order. The Contractor may also disclose "confidential" information to its employees, consultants, sureties, Subcontractors and their employees, Sub-subcontractors, and others who need to know the content of such information solely and exclusively for the Project and who agree to maintain the confidentiality of such information.

§ 2.3 Information and Services Required of the Owner

§ 2.3.1 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

§ 2.3.2 The Owner shall retain an architect lawfully licensed to practice architecture, or an entity lawfully practicing architecture, in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.

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§ 2.3.3 If the employment of the Architect terminates, the Owner shall employ a successor to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Architect.

§ 2.3.4 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

§ 2.3.5 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

§ 2.3.6 Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2.

§ 2.4 Owner's Right to Stop the Work

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3.

§ 2.5 Owner's Right to Carry Out the Work

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such default or neglect. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect and the Architect may, pursuant to Section 9.5.1, withhold or nullify a Certificate for Payment in whole or in part, to the extent reasonably necessary to reimburse the Owner for the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect, or failure. If current and future payments are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner. If the Contractor disagrees with the actions of the Owner or the Architect, or the amounts claimed as costs to the Owner, the Contractor may file a Claim pursuant to Article 15.

ARTICLE 3 CONTRACTOR

§ 3.1 General

§ 3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

§ 3.1.2 The Contractor shall perform the Work in accordance with the Contract Documents.

§ 3.1.3 The Contractor shall not be relieved of its obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect in the Architect's administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

§ 3.2 Review of Contract Documents and Field Conditions by Contractor

§ 3.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed, and correlated personal observations with requirements of the Contract Documents.

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§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.3.4, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

§ 3.2.3 The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require.

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall submit Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner, subject to Section 15.1.7, as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.

§ 3.3 Supervision and Construction Procedures

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences, and procedures, and for coordinating all portions of the Work under the Contract. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences, or procedures, the Contractor shall evaluate the jobsite safety thereof and shall be solely responsible for the jobsite safety of such means, methods, techniques, sequences, or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely notice to the Owner and Architect, and shall propose alternative means, methods, techniques, sequences, or procedures. The Architect shall evaluate the proposed alternative solely for conformance with the design intent for the completed construction. Unless the Architect objects to the Contractor's proposed alternative, the Contractor shall perform the Work using its alternative means, methods, techniques, sequences, or procedures.

§ 3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

§ 3.3.3 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

§ 3.4 Labor and Materials

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

§ 3.4.2 Except in the case of minor changes in the Work approved by the Architect in accordance with Section 3.12.8 or ordered by the Architect in accordance with Section 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive.

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§ 3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them.

§ 3.5 Warranty

§ 3.5.1 The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

§ 3.5.2 All material, equipment, or other special warranties required by the Contract Documents shall be issued in the name of the Owner, or shall be transferable to the Owner, and shall commence in accordance with Section 9.8.4.

§ 3.6 Taxes

The Contractor shall pay sales, consumer, use and similar taxes for the Work provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

§ 3.7 Permits, Fees, Notices and Compliance with Laws

§ 3.7.1 Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit as well as for other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.

§ 3.7.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work.

§ 3.7.3 If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§ 3.7.4 Concealed or Unknown Conditions

If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 14 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend that an equitable adjustment be made in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may submit a Claim as provided in Article 15.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

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§ 3.8 Allowances

§ 3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

§ 3.8.2 Unless otherwise provided in the Contract Documents,

- **.1** allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- **.2** Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit, and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and
- **.3** whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.

§ 3.9 Superintendent

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the name and qualifications of a proposed superintendent. Within 14 days of receipt of the information, the Architect may notify the Contractor, stating whether the Owner or the Architect (1) has reasonable objection to the proposed superintendent or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

§ 3.10 Contractor's Construction and Submittal Schedules

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall contain detail appropriate for the Project, including (1) the date of commencement of the Work, interim schedule milestone dates, and the date of Substantial Completion; (2) an apportionment of the Work by construction activity; and (3) the time required for completion of each portion of the Work. The schedule shall provide for the orderly progression of the Work to completion and shall not exceed time limits current under the Contract Documents. The schedule shall be revised at appropriate intervals as required by the conditions of the Work and Project.

§ 3.10.2 The Contractor, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, shall submit a submittal schedule for the Architect's approval. The Architect's approval shall not be unreasonably delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, or fails to provide submittals in accordance with the approved submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

§ 3.10.3 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect.

§ 3.11 Documents and Samples at the Site

The Contractor shall make available, at the Project site, the Contract Documents, including Change Orders, Construction Change Directives, and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and the approved Shop Drawings, Product Data, Samples, and similar required submittals. These shall be in electronic form or paper copy, available to the Architect and Owner, and

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delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

§ 3.12 Shop Drawings, Product Data and Samples

§ 3.12.1 Shop Drawings are drawings, diagrams, schedules, and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier, or distributor to illustrate some portion of the Work.

§ 3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

§ 3.12.3 Samples are physical examples that illustrate materials, equipment, or workmanship, and establish standards by which the Work will be judged.

§ 3.12.4 Shop Drawings, Product Data, Samples, and similar submittals are not Contract Documents. Their purpose is to demonstrate how the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect is subject to the limitations of Section 4.2.7. Informational submittals upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Architect without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve, and submit to the Architect, Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents, in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of Separate Contractors.

§ 3.12.6 By submitting Shop Drawings, Product Data, Samples, and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples, or similar submittals, until the respective submittal has been approved by the Architect.

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from the requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples, or similar submittals, unless the Contractor has specifically notified the Architect of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples, or similar submittals, by the Architect's approval thereof.

§ 3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples, or similar submittals, to revisions other than those requested by the Architect on previous submittals. In the absence of such notice, the Architect's approval of a resubmission shall not apply to such revisions.

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures. The Contractor shall not be required to provide professional services in violation of applicable law.

§ 3.12.10.1 If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will

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specify all performance and design criteria that such services must satisfy. The Contractor shall be entitled to rely upon the adequacy and accuracy of the performance and design criteria provided in the Contract Documents. The Contractor shall cause such services or certifications to be provided by an appropriately licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings, and other submittals prepared by such professional. Shop Drawings, and other submittals related to the Work, designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy and accuracy of the services, certifications, and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor the performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review and approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.

§ 3.12.10.2 If the Contract Documents require the Contractor's design professional to certify that the Work has been performed in accordance with the design criteria, the Contractor shall furnish such certifications to the Architect at the time and in the form specified by the Architect.

§ 3.13 Use of Site

The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, lawful orders of public authorities, and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

§ 3.14 Cutting and Patching

§ 3.14.1 The Contractor shall be responsible for cutting, fitting, or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting, or patching shall be restored to the condition existing prior to the cutting, fitting, or patching, unless otherwise required by the Contract Documents.

§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or Separate Contractors by cutting, patching, or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter construction by the Owner or a Separate Contractor except with written consent of the Owner and of the Separate Contractor. Consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold, from the Owner or a Separate Contractor, its consent to cutting or otherwise altering the Work.

§ 3.15 Cleaning Up

§ 3.15.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials and rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery, and surplus materials from and about the Project.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and the Owner shall be entitled to reimbursement from the Contractor.

§ 3.16 Access to Work

The Contractor shall provide the Owner and Architect with access to the Work in preparation and progress wherever located.

§ 3.17 Royalties, Patents and Copyrights

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect harmless from loss on account thereof, but shall not be responsible for defense or loss when a particular design, process, or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications, or other documents prepared by the Owner or Architect. However, if an infringement of a copyright or patent is discovered by, or made known to, the Contractor, the Contractor shall be responsible for the loss unless the information is promptly furnished to the Architect.

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§ 3.18 Indemnification

§ 3.18.1 To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss, or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity that would otherwise exist as to a party or person described in this Section 3.18.

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation, or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts, or other employee benefit acts.

ARTICLE 4 ARCHITECT

§ 4.1 General

§ 4.1.1 The Architect is the person or entity retained by the Owner pursuant to Section 2.3.2 and identified as such in the Agreement.

§ 4.1.2 Duties, responsibilities, and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified, or extended without written consent of the Owner, Contractor, and Architect. Consent shall not be unreasonably withheld.

§ 4.2 Administration of the Contract

§ 4.2.1 The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect issues the final Certificate for Payment. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

§ 4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents.

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and promptly report to the Owner (1) known deviations from the Contract Documents, (2) known deviations from the most recent construction schedule submitted by the Contractor, and (3) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of, and will not be responsible for acts or omissions of, the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

§ 4.2.4 Communications

The Owner and Contractor shall include the Architect in all communications that relate to or affect the Architect's services or professional responsibilities. The Owner shall promptly notify the Architect of the substance of any direct communications between the Owner and the Contractor otherwise relating to the Project. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and suppliers shall be through the Contractor. Communications by and with Separate Contractors shall be through the Owner. The Contract Documents may specify other communication protocols.

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§ 4.2.5 Based on the Architect's evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.4.2 and 13.4.3, whether or not the Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, suppliers, their agents or employees, or other persons or entities performing portions of the Work.

§ 4.2.7 The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data, and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5, and 3.12. The Architect's review shall not constitute approval of safety precautions or of any construction means, methods, techniques, sequences, or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.8 The Architect will prepare Change Orders and Construction Change Directives, and may order minor changes in the Work as provided in Section 7.4. The Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ 4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.

§ 4.2.10 If the Owner and Architect agree, the Architect will provide one or more Project representatives to assist in carrying out the Architect's responsibilities at the site. The Owner shall notify the Contractor of any change in the duties, responsibilities and limitations of authority of the Project representatives.

§ 4.2.11 The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either, and will not be liable for results of interpretations or decisions rendered in good faith.

§ 4.2.13 The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

§ 4.2.14 The Architect will review and respond to requests for information about the Contract Documents. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

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ARTICLE 5 SUBCONTRACTORS

§ 5.1 Definitions

§ 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a Separate Contractor or the subcontractors of a Separate Contractor.

§ 5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

§ 5.2 Award of Subcontracts and Other Contracts for Portions of the Work

§ 5.2.1 Unless otherwise stated in the Contract Documents, the Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the persons or entities proposed for each principal portion of the Work, including those who are to furnish materials or equipment fabricated to a special design. Within 14 days of receipt of the information, the Architect may notify the Contractor whether the Owner or the Architect (1) has reasonable objection to any such proposed person or entity or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 5.2.3 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person, or entity for one previously selected if the Owner or Architect makes reasonable objection to such substitution.

§ 5.3 Subcontractual Relations

By appropriate written agreement, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work that the Contractor, by these Contract Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies, and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

§ 5.4 Contingent Assignment of Subcontracts

§ 5.4.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that

- **.1** assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor; and
- **.2** assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

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When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.

§ 5.4.2 Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

§ 5.4.3 Upon assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity. If the Owner assigns the subcontract to a successor contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor contractor's obligations under the subcontract.

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 6.1 Owner's Right to Perform Construction and to Award Separate Contracts

§ 6.1.1 The term "Separate Contractor(s)" shall mean other contractors retained by the Owner under separate agreements. The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and with Separate Contractors retained under Conditions of the Contract substantially similar to those of this Contract, including those provisions of the Conditions of the Contract related to insurance and waiver of subrogation.

§ 6.1.2 When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

§ 6.1.3 The Owner shall provide for coordination of the activities of the Owner's own forces and of each Separate Contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with any Separate Contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to its construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, Separate Contractors, and the Owner until subsequently revised.

§ 6.1.4 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces or with Separate Contractors, the Owner or its Separate Contractors shall have the same obligations and rights that the Contractor has under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6, and Articles 10, 11, and 12.

§ 6.2 Mutual Responsibility

§ 6.2.1 The Contractor shall afford the Owner and Separate Contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a Separate Contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly notify the Architect of apparent discrepancies or defects in the construction or operations by the Owner or Separate Contractor that would render it unsuitable for proper execution and results of the Contractor's Work. Failure of the Contractor to notify the Architect of apparent discrepancies or defects prior to proceeding with the Work shall constitute an acknowledgment that the Owner's or Separate Contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work. The Contractor shall not be responsible for discrepancies or defects in the construction or operations by the Owner or Separate Contractor that are not apparent.

§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a Separate Contractor because of the Contractor's delays, improperly timed activities or defective construction. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a Separate Contractor's delays, improperly timed activities, damage to the Work or defective construction.

§ 6.2.4 The Contractor shall promptly remedy damage that the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner or Separate Contractor as provided in Section 10.2.5.

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§ 6.2.5 The Owner and each Separate Contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

§ 6.3 Owner's Right to Clean Up

If a dispute arises among the Contractor, Separate Contractors, and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Architect will allocate the cost among those responsible.

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 General

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

§ 7.1.2 A Change Order shall be based upon agreement among the Owner, Contractor, and Architect. A Construction Change Directive requires agreement by the Owner and Architect and may or may not be agreed to by the Contractor. An order for a minor change in the Work may be issued by the Architect alone.

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents. The Contractor shall proceed promptly with changes in the Work, unless otherwise provided in the Change Order, Construction Change Directive, or order for a minor change in the Work.

§ 7.2 Change Orders

§ 7.2.1 A Change Order is a written instrument prepared by the Architect and signed by the Owner, Contractor, and Architect stating their agreement upon all of the following:

- **.1** The change in the Work;
- **.2** The amount of the adjustment, if any, in the Contract Sum; and
- **.3** The extent of the adjustment, if any, in the Contract Time.

§ 7.3 Construction Change Directives

§ 7.3.1 A Construction Change Directive is a written order prepared by the Architect and signed by the Owner and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions, or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

§ 7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

- **.1** Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- **.2** Unit prices stated in the Contract Documents or subsequently agreed upon;
- **.3** Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
- **.4** As provided in Section 7.3.4.

§ 7.3.4 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.4 shall be limited to the following:

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.1 Costs of labor, including applicable payroll taxes, fringe benefits required by agreement or custom, workers' compensation insurance, and other employee costs approved by the Architect;

.2 Costs of materials, supplies, and equipment, including cost of transportation, whether incorporated or consumed;

.3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;

.4 Costs of premiums for all bonds and insurance, permit fees, and sales, use, or similar taxes, directly related to the change; and

.5 Costs of supervision and field office personnel directly attributable to the change.

§ 7.3.5 If the Contractor disagrees with the adjustment in the Contract Time, the Contractor may make a Claim in accordance with applicable provisions of Article 15.

§ 7.3.6 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Architect of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

§ 7.3.7 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Architect. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Architect determines, in the Architect's professional judgment, to be reasonably justified. The Architect's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

§ 7.3.10 When the Owner and Contractor agree with a determination made by the Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Architect will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

§ 7.4 Minor Changes in the Work

The Architect may order minor changes in the Work that are consistent with the intent of the Contract Documents and do not involve an adjustment in the Contract Sum or an extension of the Contract Time. The Architect's order for minor changes shall be in writing. If the Contractor believes that the proposed minor change in the Work will affect the Contract Sum or Contract Time, the Contractor shall notify the Architect and shall not proceed to implement the change in the Work. If the Contractor performs the Work set forth in the Architect's order for a minor change without prior notice to the Architect that such change will affect the Contract Sum or Contract Time, the Contractor waives any adjustment to the Contract Sum or extension of the Contract Time.

ARTICLE 8 TIME

§ 8.1 Definitions

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.2 The date of commencement of the Work is the date established in the Agreement.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8.

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§ 8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

§ 8.2 Progress and Completion

§ 8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement, the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, commence the Work prior to the effective date of insurance required to be furnished by the Contractor and Owner.

§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

§ 8.3 Delays and Extensions of Time

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by (1) an act or neglect of the Owner or Architect, of an employee of either, or of a Separate Contractor; (2) by changes ordered in the Work; (3) by labor disputes, fire, unusual delay in deliveries, unavoidable casualties, adverse weather conditions documented in accordance with Section 15.1.6.2, or other causes beyond the Contractor's control; (4) by delay authorized by the Owner pending mediation and binding dispute resolution; or (5) by other causes that the Contractor asserts, and the Architect determines, justify delay, then the Contract Time shall be extended for such reasonable time as the Architect may determine.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15.

§ 8.3.3 This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 Contract Sum

§ 9.1.1 The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

§ 9.1.2 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed so that application of such unit prices to the actual quantities causes substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 9.2 Schedule of Values

Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit a schedule of values to the Architect before the first Application for Payment, allocating the entire Contract Sum to the various portions of the Work. The schedule of values shall be prepared in the form, and supported by the data to substantiate its accuracy, required by the Architect. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment. Any changes to the schedule of values shall be submitted to the Architect and supported by such data to substantiate its accuracy as the Architect may require, and unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's subsequent Applications for Payment.

§ 9.3 Applications for Payment

§ 9.3.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 9.2, for completed portions of the Work. The application shall be notarized, if required, and supported by all data substantiating the Contractor's right to payment that the Owner or Architect require, such as copies of requisitions, and releases and waivers of liens from Subcontractors and suppliers, and shall reflect retainage if provided for in the Contract Documents.

§ 9.3.1.1 As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Architect, but not yet included in Change Orders.

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§ 9.3.1.2 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or supplier, unless such Work has been performed by others whom the Contractor intends to pay.

§ 9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage, and transportation to the site, for such materials and equipment stored off the site.

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information, and belief, be free and clear of liens, claims, security interests, or encumbrances, in favor of the Contractor, Subcontractors, suppliers, or other persons or entities that provided labor, materials, and equipment relating to the Work.

§ 9.4 Certificates for Payment

§ 9.4.1 The Architect will, within seven days after receipt of the Contractor's Application for Payment, either (1) issue to the Owner a Certificate for Payment in the full amount of the Application for Payment, with a copy to the Contractor; or (2) issue to the Owner a Certificate for Payment for such amount as the Architect determines is properly due, and notify the Contractor and Owner of the Architect's reasons for withholding certification in part as provided in Section 9.5.1; or (3) withhold certification of the entire Application for Payment, and notify the Contractor and Owner of the Architect's reason for withholding certification in whole as provided in Section 9.5.1.

§ 9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data in the Application for Payment, that, to the best of the Architect's knowledge, information, and belief, the Work has progressed to the point indicated, the quality of the Work is in accordance with the Contract Documents, and that the Contractor is entitled to payment in the amount certified. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion, and to specific qualifications expressed by the Architect. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work; (2) reviewed construction means, methods, techniques, sequences, or procedures; (3) reviewed copies of requisitions received from Subcontractors and suppliers and other data requested by the Owner to substantiate the Contractor's right to payment; or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 9.5 Decisions to Withhold Certification

§ 9.5.1 The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of

- **.1** defective Work not remedied;
- **.2** third party claims filed or reasonable evidence indicating probable filing of such claims, unless security acceptable to the Owner is provided by the Contractor;
- **.3** failure of the Contractor to make payments properly to Subcontractors or suppliers for labor, materials or equipment;

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.4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
.5 damage to the Owner or a Separate Contractor;
.6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
.7 repeated failure to carry out the Work in accordance with the Contract Documents.

§ 9.5.2 When either party disputes the Architect's decision regarding a Certificate for Payment under Section 9.5.1, in whole or in part, that party may submit a Claim in accordance with Article 15.

§ 9.5.3 When the reasons for withholding certification are removed, certification will be made for amounts previously withheld.

§ 9.5.4 If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or supplier to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Contractor shall reflect such payment on its next Application for Payment.

§ 9.6 Progress Payments

§ 9.6.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Architect.

§ 9.6.2 The Contractor shall pay each Subcontractor, no later than seven days after receipt of payment from the Owner, the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

§ 9.6.3 The Architect will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Architect and Owner on account of portions of the Work done by such Subcontractor.

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors and suppliers to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an obligation to pay, or to see to the payment of money to, a Subcontractor or supplier, except as may otherwise be required by law.

§ 9.6.5 The Contractor's payments to suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors or provided by suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, create any fiduciary liability or tort liability on the part of the Contractor for breach of trust, or entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

§ 9.6.8 Provided the Owner has fulfilled its payment obligations under the Contract Documents, the Contractor shall defend and indemnify the Owner from all loss, liability, damage or expense, including reasonable attorney's fees and litigation expenses, arising out of any lien claim or other claim for payment by any Subcontractor or supplier of any tier. Upon receipt of notice of a lien claim or other claim for payment, the Owner shall notify the Contractor. If approved by the applicable court, when required, the Contractor may substitute a surety bond for the property against which the lien or other claim for payment has been asserted.

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§ 9.7 Failure of Payment

If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents, the amount certified by the Architect or awarded by binding dispute resolution, then the Contractor may, upon seven additional days' notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided for in the Contract Documents.

§ 9.8 Substantial Completion

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 9.8.3 Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

§ 9.8.4 When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion; establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance; and fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in the Certificate. Upon such acceptance, and consent of surety if any, the Owner shall make payment of retainage applying to the Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

§ 9.9 Partial Occupancy or Use

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Contractor, and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

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§ 9.9.3 Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

§ 9.10 Final Completion and Final Payment

§ 9.10.1 Upon receipt of the Contractor's notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection. When the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect, (3) a written statement that the Contractor knows of no reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment, (5) documentation of any special warranties, such as manufacturers' warranties or specific Subcontractor warranties, and (6) if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts and releases and waivers of liens, claims, security interests, or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien, claim, security interest, or encumbrance. If a lien, claim, security interest, or encumbrance remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging the lien, claim, security interest, or encumbrance, including all costs and reasonable attorneys' fees.

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed, corrected, and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of the surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

§ 9.10.4 The making of final payment shall constitute a waiver of Claims by the Owner except those arising from

- **.1** liens, Claims, security interests, or encumbrances arising out of the Contract and unsettled;
- **.2** failure of the Work to comply with the requirements of the Contract Documents;
- **.3** terms of special warranties required by the Contract Documents; or
- **.4** audits performed by the Owner, if permitted by the Contract Documents, after final payment.

§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor, or a supplier, shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 Safety Precautions and Programs

The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Contract.

§ 10.2 Safety of Persons and Property

§ 10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury, or loss to

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.1 employees on the Work and other persons who may be affected thereby;
.2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody, or control of the Contractor, a Subcontractor, or a Sub-subcontractor; and
.3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction.

§ 10.2.2 The Contractor shall comply with, and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities, bearing on safety of persons or property or their protection from damage, injury, or loss.

§ 10.2.3 The Contractor shall implement, erect, and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards; promulgating safety regulations; and notifying the owners and users of adjacent sites and utilities of the safeguards.

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment, or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3. The Contractor may make a Claim for the cost to remedy the damage or loss to the extent such damage or loss is attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect.

§ 10.2.7 The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

§ 10.2.8 Injury or Damage to Person or Property
If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, notice of the injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 10.3 Hazardous Materials and Substances
§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials or substances. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and notify the Owner and Architect of the condition.

§ 10.3.2 Upon receipt of the Contractor's notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of the material or substance or who are to perform the task of removal or safe containment of the material or substance. The Contractor and the Architect will

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promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable additional costs of shutdown, delay, and start-up.

§ 10.3.3 To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss, or expense is due to the fault or negligence of the party seeking indemnity.

§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for hazardous materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for hazardous materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.

§ 10.3.5 The Contractor shall reimburse the Owner for the cost and expense the Owner incurs (1) for remediation of hazardous materials or substances the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

§ 10.3.6 If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall reimburse the Contractor for all cost and expense thereby incurred.

§ 10.4 Emergencies

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury, or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 Contractor's Insurance and Bonds

§ 11.1.1 The Contractor shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Contractor shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Owner, Architect, and Architect's consultants shall be named as additional insureds under the Contractor's commercial general liability policy or as otherwise described in the Contract Documents.

§ 11.1.2 The Contractor shall provide surety bonds of the types, for such penal sums, and subject to such terms and conditions as required by the Contract Documents. The Contractor shall purchase and maintain the required bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 11.1.3 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

§ 11.1.4 Notice of Cancellation or Expiration of Contractor's Required Insurance. Within three (3) business days of the date the Contractor becomes aware of an impending or actual cancellation or expiration of any insurance required by the Contract Documents, the Contractor shall provide notice to the Owner of such impending or actual cancellation or expiration. Upon receipt of notice from the Contractor, the Owner shall, unless the lapse in coverage arises from an act

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or omission of the Owner, have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by the Contractor. The furnishing of notice by the Contractor shall not relieve the Contractor of any contractual obligation to provide any required coverage.

§ 11.2 Owner's Insurance

§ 11.2.1 The Owner shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Owner shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located.

§ 11.2.2 Failure to Purchase Required Property Insurance. If the Owner fails to purchase and maintain the required property insurance, with all of the coverages and in the amounts described in the Agreement or elsewhere in the Contract Documents, the Owner shall inform the Contractor in writing prior to commencement of the Work. Upon receipt of notice from the Owner, the Contractor may delay commencement of the Work and may obtain insurance that will protect the interests of the Contractor, Subcontractors, and Sub-Subcontractors in the Work. When the failure to provide coverage has been cured or resolved, the Contract Sum and Contract Time shall be equitably adjusted. In the event the Owner fails to procure coverage, the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent the loss to the Owner would have been covered by the insurance to have been procured by the Owner. The cost of the insurance shall be charged to the Owner by a Change Order. If the Owner does not provide written notice, and the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain the required insurance, the Owner shall reimburse the Contractor for all reasonable costs and damages attributable thereto.

§ 11.2.3 Notice of Cancellation or Expiration of Owner's Required Property Insurance. Within three (3) business days of the date the Owner becomes aware of an impending or actual cancellation or expiration of any property insurance required by the Contract Documents, the Owner shall provide notice to the Contractor of such impending or actual cancellation or expiration. Unless the lapse in coverage arises from an act or omission of the Contractor: (1) the Contractor, upon receipt of notice from the Owner, shall have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by either the Owner or the Contractor; (2) the Contract Time and Contract Sum shall be equitably adjusted; and (3) the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent any loss to the Owner would have been covered by the insurance had it not expired or been cancelled. If the Contractor purchases replacement coverage, the cost of the insurance shall be charged to the Owner by an appropriate Change Order. The furnishing of notice by the Owner shall not relieve the Owner of any contractual obligation to provide required insurance.

§ 11.3 Waivers of Subrogation

§ 11.3.1 The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents, and employees, each of the other; (2) the Architect and Architect's consultants; and (3) Separate Contractors, if any, and any of their subcontractors, sub-subcontractors, agents, and employees, for damages caused by fire, or other causes of loss, to the extent those losses are covered by property insurance required by the Agreement or other property insurance applicable to the Project, except such rights as they have to proceeds of such insurance. The Owner or Contractor, as appropriate, shall require similar written waivers in favor of the individuals and entities identified above from the Architect, Architect's consultants, Separate Contractors, subcontractors, and sub-subcontractors. The policies of insurance purchased and maintained by each person or entity agreeing to waive claims pursuant to this section 11.3.1 shall not prohibit this waiver of subrogation. This waiver of subrogation shall be effective as to a person or entity (1) even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, (2) even though that person or entity did not pay the insurance premium directly or indirectly, or (3) whether or not the person or entity had an insurable interest in the damaged property.

§ 11.3.2 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, to the extent permissible by such policies, the Owner waives all rights in accordance with the terms of Section 11.3.1 for damages caused by fire or other causes of loss covered by this separate property insurance.

§ 11.4 Loss of Use, Business Interruption, and Delay in Completion Insurance

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The Owner, at the Owner's option, may purchase and maintain insurance that will protect the Owner against loss of use of the Owner's property, or the inability to conduct normal operations, due to fire or other causes of loss. The Owner waives all rights of action against the Contractor and Architect for loss of use of the Owner's property, due to fire or other hazards however caused.

§11.5 Adjustment and Settlement of Insured Loss

§ 11.5.1 A loss insured under the property insurance required by the Agreement shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.5.2. The Owner shall pay the Architect and Contractor their just shares of insurance proceeds received by the Owner, and by appropriate agreements the Architect and Contractor shall make payments to their consultants and Subcontractors in similar manner.

§ 11.5.2 Prior to settlement of an insured loss, the Owner shall notify the Contractor of the terms of the proposed settlement as well as the proposed allocation of the insurance proceeds. The Contractor shall have 14 days from receipt of notice to object to the proposed settlement or allocation of the proceeds. If the Contractor does not object, the Owner shall settle the loss and the Contractor shall be bound by the settlement and allocation. Upon receipt, the Owner shall deposit the insurance proceeds in a separate account and make the appropriate distributions. Thereafter, if no other agreement is made or the Owner does not terminate the Contract for convenience, the Owner and Contractor shall execute a Change Order for reconstruction of the damaged or destroyed Work in the amount allocated for that purpose. If the Contractor timely objects to either the terms of the proposed settlement or the allocation of the proceeds, the Owner may proceed to settle the insured loss, and any dispute between the Owner and Contractor arising out of the settlement or allocation of the proceeds shall be resolved pursuant to Article 15. Pending resolution of any dispute, the Owner may issue a Construction Change Directive for the reconstruction of the damaged or destroyed Work.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 Uncovering of Work

§ 12.1.1 If a portion of the Work is covered contrary to the Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect's examination and be replaced at the Contractor's expense without change in the Contract Time.

§ 12.1.2 If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, the Contractor shall be entitled to an equitable adjustment to the Contract Sum and Contract Time as may be appropriate. If such Work is not in accordance with the Contract Documents, the costs of uncovering the Work, and the cost of correction, shall be at the Contractor's expense.

§ 12.2 Correction of Work

§ 12.2.1 Before Substantial Completion

The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, discovered before Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense.

§ 12.2.2 After Substantial Completion

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of any applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of notice from the Owner to do so, unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.5.

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§ 12.2.2.2 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

§ 12.2.2.3 The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

§ 12.2.3 The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction of the Owner or Separate Contractors, whether completed or partially completed, caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

§ 12.3 Acceptance of Nonconforming Work

If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 Governing Law

The Contract shall be governed by the law of the place where the Project is located, excluding that jurisdiction's choice of law rules. If the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.

§ 13.2 Successors and Assigns

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns, and legal representatives to covenants, agreements, and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate the assignment.

§ 13.3 Rights and Remedies

§ 13.3.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights, and remedies otherwise imposed or available by law.

§ 13.3.2 No action or failure to act by the Owner, Architect, or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed upon in writing.

§ 13.4 Tests and Inspections

§ 13.4.1 Tests, inspections, and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules, and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections, and

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approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections, and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of tests, inspections, or approvals that do not become requirements until after bids are received or negotiations concluded. The Owner shall directly arrange and pay for tests, inspections, or approvals where building codes or applicable laws or regulations so require.

§ 13.4.2 If the Architect, Owner, or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection, or approval not included under Section 13.4.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection, or approval, by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.4.3, shall be at the Owner's expense.

§ 13.4.3 If procedures for testing, inspection, or approval under Sections 13.4.1 and 13.4.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure, including those of repeated procedures and compensation for the Architect's services and expenses, shall be at the Contractor's expense.

§ 13.4.4 Required certificates of testing, inspection, or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Architect.

§ 13.4.5 If the Architect is to observe tests, inspections, or approvals required by the Contract Documents, the Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.4.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

§ 13.5 Interest

Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at the rate the parties agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 Termination by the Contractor

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, for any of the following reasons:

- **.1** Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;
- **.2** An act of government, such as a declaration of national emergency, that requires all Work to be stopped;
- **.3** Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or
- **.4** The Owner has failed to furnish to the Contractor reasonable evidence as required by Section 2.2.

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, repeated suspensions, delays, or interruptions of the entire Work by the Owner as described in Section 14.3, constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed, as well as reasonable overhead and profit on Work not executed, and costs incurred by reason of such termination.

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§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, or their agents or employees or any other persons or entities performing portions of the Work because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' notice to the Owner and the Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

§ 14.2 Termination by the Owner for Cause

§ 14.2.1 The Owner may terminate the Contract if the Contractor

- **.1** repeatedly refuses or fails to supply enough properly skilled workers or proper materials;
- **.2** fails to make payment to Subcontractors or suppliers in accordance with the respective agreements between the Contractor and the Subcontractors or suppliers;
- **.3** repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or
- **.4** otherwise is guilty of substantial breach of a provision of the Contract Documents.

§ 14.2.2 When any of the reasons described in Section 14.2.1 exist, and upon certification by the Architect that sufficient cause exists to justify such action, the Owner may, without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- **.1** Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- **.2** Accept assignment of subcontracts pursuant to Section 5.4; and
- **.3** Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

§ 14.3 Suspension by the Owner for Convenience

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work, in whole or in part for such period of time as the Owner may determine.

§ 14.3.2 The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay, or interruption under Section 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent

- **.1** that performance is, was, or would have been, so suspended, delayed, or interrupted, by another cause for which the Contractor is responsible; or
- **.2** that an equitable adjustment is made or denied under another provision of the Contract.

§ 14.4 Termination by the Owner for Convenience

§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

§ 14.4.2 Upon receipt of notice from the Owner of such termination for the Owner's convenience, the Contractor shall

- **.1** cease operations as directed by the Owner in the notice;
- **.2** take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and
- **.3** except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

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§ 14.4.3 In case of such termination for the Owner's convenience, the Owner shall pay the Contractor for Work properly executed; costs incurred by reason of the termination, including costs attributable to termination of Subcontracts; and the termination fee, if any, set forth in the Agreement.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 Claims

§ 15.1.1 Definition

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, a change in the Contract Time, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim. This Section 15.1.1 does not require the Owner to file a Claim in order to impose liquidated damages in accordance with the Contract Documents.

§ 15.1.2 Time Limits on Claims

The Owner and Contractor shall commence all Claims and causes of action against the other and arising out of or related to the Contract, whether in contract, tort, breach of warranty or otherwise, in accordance with the requirements of the binding dispute resolution method selected in the Agreement and within the period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all Claims and causes of action not commenced in accordance with this Section 15.1.2.

§ 15.1.3 Notice of Claims

§ 15.1.3.1 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered prior to expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party under this Section 15.1.3.1 shall be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

§ 15.1.3.2 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party. In such event, no decision by the Initial Decision Maker is required.

§ 15.1.4 Continuing Contract Performance

§ 15.1.4.1 Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents.

§ 15.1.4.2 The Contract Sum and Contract Time shall be adjusted in accordance with the Initial Decision Maker's decision, subject to the right of either party to proceed in accordance with this Article 15. The Architect will issue Certificates for Payment in accordance with the decision of the Initial Decision Maker.

§ 15.1.5 Claims for Additional Cost

If the Contractor wishes to make a Claim for an increase in the Contract Sum, notice as provided in Section 15.1.3 shall be given before proceeding to execute the portion of the Work that is the subject of the Claim. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

§ 15.1.6 Claims for Additional Time

§ 15.1.6.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, notice as provided in Section 15.1.3 shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary.

§ 15.1.6.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated, and had an adverse effect on the scheduled construction.

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§ 15.1.7 Waiver of Claims for Consequential Damages

The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

.1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and

.2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit, except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.7 shall be deemed to preclude assessment of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

§ 15.2 Initial Decision

§ 15.2.1 Claims, excluding those where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2 or arising under Sections 10.3, 10.4, and 11.5, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim. If an initial decision has not been rendered within 30 days after the Claim has been referred to the Initial Decision Maker, the party asserting the Claim may demand mediation and binding dispute resolution without a decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of the request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished, or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution.

§ 15.2.6 Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.

§ 15.2.6.1 Either party may, within 30 days from the date of receipt of an initial decision, demand in writing that the other party file for mediation. If such a demand is made and the party receiving the demand fails to file for mediation within 30 days after receipt thereof, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision.

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§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.8 If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

§ 15.3 Mediation

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract, except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.7, shall be subject to mediation as a condition precedent to binding dispute resolution.

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

§ 15.3.3 Either party may, within 30 days from the date that mediation has been concluded without resolution of the dispute or 60 days after mediation has been demanded without resolution of the dispute, demand in writing that the other party file for binding dispute resolution. If such a demand is made and the party receiving the demand fails to file for binding dispute resolution within 60 days after receipt thereof, then both parties waive their rights to binding dispute resolution proceedings with respect to the initial decision.

§ 15.3.4 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

§ 15.4 Arbitration

§ 15.4.1 If the parties have selected arbitration as the method for binding dispute resolution in the Agreement, any Claim subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of the Agreement. The Arbitration shall be conducted in the place where the Project is located, unless another location is mutually agreed upon. A demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The party filing a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded.

§ 15.4.1.1 A demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation, but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the Claim would be barred by the applicable statute of limitations. For statute of limitations purposes, receipt of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the Claim.

§ 15.4.2 The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

§ 15.4.3 The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to the Agreement, shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

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§ 15.4.4 Consolidation or Joinder

§ 15.4.4.1 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party provided that (1) the arbitration agreement governing the other arbitration permits consolidation, (2) the arbitrations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).

§ 15.4.4.2 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.

§ 15.4.4.3 The Owner and Contractor grant to any person or entity made a party to an arbitration conducted under this Section 15.4, whether by joinder or consolidation, the same rights of joinder and consolidation as those of the Owner and Contractor under this Agreement.

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GENERAL REQUIREMENTS

AND

TECHNICAL SPECIFICATIONS

SECTION 01 1000 - SUMMARY OF THE WORK

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provision of Contract, including General and Supplementary Conditions and other Division 01 or Specification Sections, apply this Section.

1.2 SUMMARY

A. This Section includes the following:
1. Project Information
2. Work covered by Contract Documents
3. Type of Contract
4. Access to Site and Work Restrictions
5. Specification and drawing conventions
6. Miscellaneous provisions

B. Related Requirements:
1. Division 01 Section “Temporary Facilities and Controls” for limitations and procedures governing temporary use of Owner’s Facilities.

1.3 PROJECT INFORMATION

A. Project Identification: MPD Traffic Safety Unit - Emergency Generator
850 Virginia Street, Mobile, Alabama 36603
City of Mobile Project No. PD-003-25

B. Owner: City of Mobile
Mobile Police Department
P.O. Box 1827, Mobile, Alabama 36633
Owner’s Representative: Mr. David M. Cordingly
Phone: (251) 802-2436
Email: david.cordingly@cityofmobile.org

C. Electrical Engineer: Jaguar Consulting, LLC
8658 Capital Drive North
Mobile, AL 36695
Contact: Christina Marie
Phone: (251) 307-1037
Email: jaguarengineers@yahoo.com

D. Engineer’s Consultants: The Engineer has retained the following design professionals who have prepared designated portions of the Contract Documents:

1. Mechanical Engineer
Dell Consulting, LLC
813 Downtowner Boulevard, Suite D
Mobile, Alabama 36609

Contact: Mike Pruette
Phone: (251) 554-9606
Email: mike@dellconsultingllc.com

1.4 WORK COVERED BY CONTRACT DOCUMENTS

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

1. New work includes, but is not limited to, removal of existing generator and associated cables, conduit, boxes, etc. Generator to be turned over to Owner.

2. Procurement and installation of a new 80 kW natural gas generator.

3. The furnishing and installation of (2) new 200A NEMA 3R service entrance rated automatic transfer switches.

4. Modify circuits in existing Office switchboard to provide Office and Shop Buildings with separate independent services.

5. New gas service shall be provided to accommodate the load of the new generator. Contractor shall coordinate with Utility provider to provide gas service/meter to serve the new generator. Gas piping shall be routed underground from the new meter to the location of the new generator.

6. The facility is to be located at 850 Virginia Street, Mobile, Alabama 36603.

B. Type of Contract:

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

1.5 ACCESS TO SITE

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

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

1. Limits: Confine construction operations to area identified as “Limit of Work”.

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

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

b. Schedule deliveries to minimize space and time requirements for storage of

materials and equipment on-site.

1.6 WORK RESTRICTIONS

A. General: Comply with restrictions on construction operations.

1. Comply with limitations on use of public streets and with other requirements of authorities having jurisdiction.

B. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated:

1. Notify Owner not less than seven (7) days in advance of proposed utility interruptions.

2. Obtain Owner's written permission before proceeding with utility interruptions.

C. Controlled Substances: Use of controlled substances is not permitted.

1.7 SPECIFICATION AND DRAWING CONVENTIONS

A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:

1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.

A. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.

B. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:

1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
2. Abbreviations: Materials and products are identified by abbreviations published as part of the U.S. National CAD Standard.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 1000

SECTION 01 2100 - ALLOWANCES

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Allowances will be utilized to:

1. Defer selection of certain items until more information is available.

2. Provide for discretionary installation of materials where exact and specific conditions cannot be determined in advance.

3. Provide for the discretionary use of labor where tasks and time frames cannot be determined in advance.

B. Include in Total Bid a stipulated lump sum allowance amount as specified in this Section.

1.3 ALLOWANCE

A. Include in the Total Base Bid a stipulated allowance(s) as indicated on the Bid Form for the use upon Owner's instruction. Upon Contractor inspection and Owner approval, any additional work that may be required, but not covered in the original Scope of Work (Base Scope Bid), shall be added to the scope and cost charged against the Contingency Allowance. Contractor's cost for products, delivery, installation labor, insurance, payroll, bonding, equipment rental and overhead and profit will be included in the Allowances. Contractor's markups on allowances are limited to 10% for subcontractor's work and 15% for his own forces.

B. Use of Contingency Allowance(s) shall be approved in writing by the Owner before any materials are ordered or work performed.

C. Upon completion of the Work, any unused portion of the Allowances shall be credited back to the City of Mobile in the form of a Change Order.

D. Contractor shall provide a detailed proposal of the work with overhead and profit broken out. Such proposals shall include proposals from subcontractors, also showing their detailed proposal with overhead and profit broken out.

1.4 SELECTION AND PURCHASE

A. Advise the Project Manager when final selection and purchase of allowance item must be complete to avoid delay.

1.5 SUBMITTALS

A. Request for Use of Allowance: Submit proposals for approval that detail and break out costs for contractors and subcontractor's markups.

B. After Use of Allowance: Submit invoices to show quantity delivered to the site for each allowance.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 INSPECTION

A. Promptly inspect all Allowance items upon delivery. Immediately report any shortage, damage, or defects to Project Manager.

3.2 PREPARATION

A. Coordinate materials and installation to assure that each item is integrated with related construction activities.

3.3 ALLOWANCE SCHEDULE

A. Allowance No. 1:
   1. Contingency Allowance
      a. Include the sum of $10,000.00 for unforeseen conditions
      b. The need to perform the additional work and any associated increases in the Contract Amount shall be agreed upon by the City of Mobile and the Contractor prior to ordering the materials or undertaking of the work.

END OF SECTION 01 2100

SECTION 01 2300 - ALTERNATES

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative and procedural requirements for alternates.

1.3 DEFINISTIONS

A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the bidding requirements that may be added to or deducted from the base bid amount if Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.

1. Alternates described in this Section are part of the Work only if enumerated in the Agreement.

2. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternate into the Work. No other adjustments are made to the Contract Sum.

1.4 PROCEDURES

A. Coordination: Revise or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.

1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.

B. Notification: Notification: Immediately following award of the Contract, notify each party involved, in writing, of the status of each alternate. Indicate if alternates have been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated revisions to alternates.

C. Execute accepted alternates under the same conditions as other work of the Contract.

D. Schedule: A schedule of alternates is included at the end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the work described under each alternate.

1.5 SCHEDULE OF ALTERNATES

ALTERNATE NO. 1: Sewer Main Lining

Provide 150 liner feet of cured-in-place pipe lining for the existing 8" clay sewer main pipe as indicated on the drawings.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF SECTION 01 2300

SECTION 01 2600 - CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section specifies administrative and procedural requirements for handling and processing Contract modifications.

B. Related Sections include the following:

1. Division 01 Section "Product Requirements" for administrative procedures for handling requests for substitutions made after Contract award.

1.3 MINOR CHANGES IN THE WORK

A. Architect will issue supplemental instructions authorizing Minor Changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, on AIA Document G710, "Architect's Supplemental Instructions."

1.4 PROPOSAL REQUESTS

A. Owner-Initiated Proposal Requests: Architect will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.

1. Proposal Requests issued by Architect are for information only. Do not consider them instructions either to stop work in progress or to execute the proposed change.
2. Within 10 days after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.

a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
c. Include costs of labor and supervision directly attributable to the change.
d. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.

B. Contractor-Initiated Proposals: If latent or unforeseen conditions require modifications to the Contract, Contractor may propose changes by submitting a request for a change to Architect.

1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
4. Include costs of labor and supervision directly attributable to the change.
5. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
6. Comply with requirements in Division 01 Section "Product Requirements" if the proposed change requires substitution of one product or system for product or system specified.

C. Proposal Request Form: Use AIA Document G709 for Proposal Requests.

1.5 CHANGE ORDER PROCEDURES

A. On Owner's approval of a Proposal Request, Architect will issue a Change Order for signatures of Owner and Contractor on AIA Document G701.

1.6 CONSTRUCTION CHANGE DIRECTIVE

A. Construction Change Directive: Architect may issue a Construction Change Directive on AIA Document G714. Construction Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.

1. Construction Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.

B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.

1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 2600

SECTION 01 2900 - PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section specifies administrative and procedural requirements necessary to prepare and process Applications for Payment.

B. Related Sections include the following:
1. Division 01 Section "Contract Modification Procedures" for administrative procedures for handling changes to the Contract.
2. Division 01 Section "Construction Progress Documentation" for administrative requirements governing preparation and submittal of Contractor's Construction Schedule and Submittals Schedule.

1.3 DEFINITIONS

A. Schedule of Values: A statement furnished by Contractor allocating portions of the Contract Sum to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

1.4 SCHEDULE OF VALUES

A. Coordination: Coordinate preparation of the Schedule of Values with preparation of Contractor's Construction Schedule.
1. Correlate line items in the Schedule of Values with other required administrative forms and schedules, including the following:
   a. Application for Payment forms with Continuation Sheets.
   b. Submittals Schedule.
   c. Contractor's Construction Schedule.
2. Submit the Schedule of Values to Architect at earliest possible date but no later than seven days before the date scheduled for submittal of initial Applications for Payment.

B. Format and Content: Use the Project Manual table of contents as a guide to establish line items for the Schedule of Values. Provide at least one line item for each Specification Section.
1. Identification: Include the following Project identification on the Schedule of Values:
   a. Project name and location.
   b. Name of Architect.
   c. Architect's project number.

d. Contractor's name and address.
e. Date of submittal.

2. Submit draft of AIA Document G703 Continuation Sheets.
3. Arrange the Schedule of Values in tabular form with separate columns to indicate the following for each item listed:

a. Related Specification Section or Division.
b. Description of the Work.
c. Name of subcontractor.
d. Name of manufacturer or fabricator.
e. Name of supplier.
f. Change Orders (numbers) that affect value.
g. Dollar value.
   1) Percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.

4. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the Project Manual table of contents. Provide several line items for principal subcontract amounts, where appropriate.
5. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
6. Provide a separate line item in the Schedule of Values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
   a. Differentiate between items stored on-site and items stored off-site. If specified, include evidence of insurance or bonded warehousing.
7. Provide separate line items in the Schedule of Values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
8. Each item in the Schedule of Values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.
   a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the Schedule of Values or distributed as general overhead expense, at Contractor's option.
9. Schedule Updating: Update and resubmit the Schedule of Values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.5 APPLICATIONS FOR PAYMENT

A. Each Application for Payment shall be consistent with previous applications and payments as certified by Architect and paid for by Owner.
   1. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.

B. Payment Application Times: The date for each progress payment is indicated in the Agreement between Owner and Contractor. The period of construction Work covered by each Application for Payment is the period indicated in the Agreement.

C. Payment Application Forms: Use AIA Document G702 and AIA Document G703 Continuation Sheets as form for Applications for Payment.

D. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Architect will return incomplete applications without action.
   1. Entries shall match data on the Schedule of Values and Contractor's Construction Schedule. Use updated schedules if revisions were made.
   2. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.

E. Transmittal: Submit 3 signed and notarized original copies of each Application for Payment to Architect by a method ensuring receipt within 24 hours. One copy shall include waivers of lien and similar attachments if required.
   1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.

F. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's lien from every entity who is lawfully entitled to file a mechanic's lien arising out of the Contract and related to the Work covered by the payment.
   1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
   2. When an application shows completion of an item, submit final or full waivers.
   3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
   4. Waiver Forms: Submit waivers of lien on forms, executed in a manner acceptable to Owner.

G. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:
   1. List of subcontractors.
   2. Schedule of Values.
   3. Contractor's Construction Schedule (preliminary if not final).
   4. Products list.
   5. Schedule of unit prices.
   6. List of Contractor's staff assignments.
   7. List of Contractor's principal consultants.
   8. Copies of building permits.
   9. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
   10. Initial progress report.
   11. Report of preconstruction conference.
   12. Certificates of insurance and insurance policies.
   13. Performance and payment bonds.
   14. Data needed to acquire Owner's insurance.

H. Application for Payment at Substantial Completion: After issuing the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.
   1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
   2. This application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.

I. Final Payment Application: Submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:
   1. Evidence of completion of Project closeout requirements.
   2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
   3. Updated final statement, accounting for final changes to the Contract Sum.
   4. AIA Document G706, "Contractor's Affidavit of Payment of Debts and Claims."
   5. AIA Document G706A, "Contractor's Affidavit of Release of Liens."
   6. AIA Document G707, "Consent of Surety to Final Payment."
   7. Evidence that claims have been settled.
   8. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.
   9. Final, liquidated damages settlement statement.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 2900

SECTION 01 2973 - SCHEDULE OF VALUES

PART 1 - GENERAL

1.01 GENERAL:

A. Related requirements specified elsewhere:

1. Scheduling and Sequencing
2. Submittals
3. Product Substitutions
4. Construction Schedules

B. Submit Schedule of Values to the Engineer, at least ten (10) days prior to submitting first Application for Payment.

C. Upon request by Engineer, support values given with data that will substantiate their correctness.

D. List quantities of materials specified under unit price allowances.

E. Use Schedule of Values only as basis for Contractor's Applications for Payment.

1.02 FORM OF SUBMITTAL:

A. Submit on AIA Document G-703 "Continuation Sheet", 1992 Edition, or other approved Format acceptable to the Engineer and Owner. Schedule of Values shall be submitted for approval.

1.03 PREPARING SCHEDULE OF VALUES:
(Unless directed otherwise in the General Conditions, follow the SOV guideline listed below)

A. Itemize separate line item cost for each of following general cost items:

1. Performance and Payment Bonds.

2. Field Supervision and Layout.

3. Temporary Facilities and Controls.

4. Materials

B. Itemize separate line item cost for work required by each section of this specification including General Conditions of the Contract. Itemization shall be such that the progress of the work can be clearly defined.

C. Break down installed costs into:

1. Cost of component products, delivered and unloaded at job site. (List under Column F, G-703).

2. Total installed cost, with overhead and profit. (List under Column C, G-703).

D. For each line item which has an installed value of more than $20,000.00, break down costs to list major products or operations under each item.

E. Round off figures to nearest $1.00.

F. Make sum of total costs of all items listed in schedule equal to total Contract sum.

1.04 REVIEW AND RESUBMITTAL:

A. After review by Engineer, revise and re-submit Schedule (and Schedule of Material Values) as required.

B. Re-submit revised Schedule in same manner.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF SECTION 01 2973

SECTION 01 3100 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:

1. General project coordination procedures.
2. Administrative and supervisory personnel.
3. Coordination drawings.
4. Requests for Information (RFIs).
5. Project meetings.

B. Each contractor shall participate in coordination requirements. Certain areas of responsibility are assigned to a specific contractor.

C. Related Sections:
1. Division 1 Section "Execution Requirements"
2. Division 1 Section "Closeout Procedures" for coordinating closeout of the Contract.

1.3 DEFINITIONS

A. RFI: Request from Owner, Architect, or Contractor seeking information from each other during construction.

1.4 COORDINATION

A. Contractor shall be responsible for coordinating all trades of his contract, Owners Contractors, coordinating construction sequences and schedules, and coordinating actual installed location and interface of work.

B. Contractor shall supervise and direct the development of coordination drawings showing comprehensive coordination and integration of all Work of this project including, but not limited to, structural, architectural mechanical, plumbing, fire protection, electrical disciplines, and Owners Contractors.

C. Coordination drawings are intended to assist Contractor and all trades during construction and may be used to supplement shop drawings, record drawings, and other required submittals.

D. Coordination: Each contractor shall supervise and direct construction operations with those of subcontractors and entities to ensure efficient and orderly installation of each part of the Work.

Each contractor shall coordinate its operations with operations, included in different Sections that depend on each other for proper installation, connection, and operation.

1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
2. Coordinate installation of different components with other contractors to ensure maximum performance and accessibility for required maintenance, service, and repair.
3. Make adequate provisions to accommodate items scheduled for later installation.

E. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.

1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.

F. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:

1. Preparation of Contractor's construction schedule.
2. Preparation of the schedule of values.
3. Installation and removal of temporary facilities and controls.
4. Delivery and processing of submittals.
5. Progress meetings.
6. Pre-installation conferences.
7. Project closeout activities.
8. Startup and adjustment of systems.
9. Project closeout activities.

1.5 KEY PERSONNEL

A. Key Personnel Names: Within 5 days of Notice to Proceed, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home, office, and cellular telephone numbers and email addresses. Provide names, addresses, and telephone numbers of individuals assigned as standbys in the absence of individuals assigned to Project.

1. Post copies of list at site. Keep list current at all times.

1.6 REQUESTS FOR INFORMATION (RFIs)

A. General: Immediately on discovery of the need for additional information or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.

1. Engineer/Architect will return RFIs submitted to Engineer/Architect by other entities controlled by Contractor with no response.

2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.

1.7 PROJECT MEETINGS

A. General: Attendance of Subcontractors and Superintendent at a biweekly progress meeting is required.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 3100

SECTION 01 3119 - PROJECT MEETINGS

PART 1 – GENERAL

1.01 RELATED DOCUMENTS:

A. Drawings and general provisions of Contract, including General Conditions and Division 1 of Specification Sections, apply to work of this Section.

1.02 DESCRIPTION:

A. This section specifies administrative and procedural requirements for project meetings including, but not limited to:

1. Pre-Construction Meetings
2. Pre-Installation Meetings
3. Progress/Schedule Update/Coordination Meetings

B. The General Contractor will conduct the meetings listed above, in addition to those enumerated in other sections this specification, to ensure safe and quality execution of the project, and proper coordination of the work with building users and Owner’s requirements.

1.03 PRE-CONSTRUCTION MEETING:

A. The Engineer and Owner will schedule a pre-construction and organizational meeting prior to commencement of construction activities. The Engineer will conduct the meeting to review with the Contractor the Contractor's responsibilities and personnel assignments.

B. Attendees: The Owner, the Engineer, the Contractor and his superintendent, major subcontractors, manufacturers, suppliers, and other concerned parties shall each be represented at the meeting. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.

C. Agenda: Discuss items of significance which could affect progress, including such topics as:

1. Tentative overall construction schedule including critical sequencing or phasing.
2. Critical path or critical sequence items.
3. Tentative weekly work schedule and working hours.
4. Work restrictions.
5. Designation of responsible personnel, their duties, and accurate contact information.
6. Procedures for processing field decisions and Change Orders.
7. Procedures for RFIs.
8. Procedures for testing and inspecting.
9. Procedures for processing Applications for Payment.
10. Distribution of Contract Documents and project correspondence.
11. Use of the premises including office, work and storage areas.
12. Owner's occupancy requirements.

13. Parking availability.
14. Equipment and material deliveries.
15. Temporary interruption of electrical power, HVAC, water, etc. (if any).
16. Temporary occupation of interior spaces.
17. Safety and security procedures.
18. Housekeeping.
19. Construction waste management and recycling.
20. Preparation of record documents.
21. Review of bid allowances and unit prices and how they would apply to the contract.

C. Reporting: The Engineer will distribute meeting minutes to the Owner and to attendees designated by the Owner.

1.04 PRE-INSTALLATION CONFERENCES: Unless permitted otherwise, the following shall apply to the preinstallation conferences.

A. The Contractor shall conduct a pre-installation conference at the site before each construction activity that requires coordination with other construction, or as required by various Sections of this Project Manual or by Construction Drawings. Shop drawings shall be approved prior to the meeting and reviewed during the meeting. Contractor is to advise the Designer and Owner of scheduled meeting dates with at least a one-week notice.

B. Attendees: The installer and technical representatives of manufacturers and fabricators involved in or affected by the installation, and its coordination or integration with other materials and installations that have preceded or will follow, SHALL attend the meeting. Contractor and all subcontractor supervisory personnel are also required to attend. The designer shall also attend.

C. Reporting: The Designer will distribute meeting minutes to the Owner, all affected parties, and all meeting attendees. Significant discussions and agreements and disagreements of each conference, along with the approved schedule, will be recorded.

D. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the work and reconvene the conference at the earliest feasible date.

1.05 PROGRESS / SCHEDULE UPDATE / COORDINATION MEETINGS: Unless permitted otherwise, the following shall apply to the progress (OAC) meetings.

A. The Contractor will conduct progress/scheduling update/coordination meetings every two weeks. The Owner may require these meetings to be conducted on a weekly schedule. The Contractor will notify the Owner and Engineer of scheduled meeting dates and locations. Dates of meetings will be coordinated with preparation of the monthly application for payment. Construction on in use facilities will likely require more frequent progress and schedule meetings.

B. Attendees: In addition to representatives of the Owner, Engineer, and Contractor, each subcontractor, supplier, or other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these

meetings by persons familiar with the project and authorized to conclude matters relating to progress.

C. Agenda: Contractor shall prepare the meeting agenda. Distribute the agenda to all invited attendees. The following agenda items shall be included in the meeting agenda, and discussed in the meeting.

1. Review and correction or approve minutes of the previous progress meeting.

2. Construction Schedule: The Contractor shall review progress since the last meeting. Determine where each activity is in relation to the Contractor's Construction Schedule, whether on time or ahead or behind schedule. If behind schedule, submit a recover schedule and secure commitments from parties involved to do so.

3. Review the following topics for present and future issues:

    a. Safety
    b. Shoring needs and problems
    c. Construction incidence reports
    d. Coordination of construction activities with Owner’s use of the facility

4. Review the present and future needs of each entity present, including such items as:

    a. Coordination or Interface requirements with Owner’s use of facility.
    b. Time
    c. Submittals
    d. Sequences of operations
    e. Deliveries
    f. Off-site fabrication problems
    g. Access
    h. Site utilization
    i. Temporary facilities and services
    j. Hours of work
    k. Hazards and risks
    l. Housekeeping
    m. Quality and work standards
    n. Change orders
    o. Documentation of information for payment requests
    p. RFI’s
    q. Field Observations
    r. Pending claims and disputes
    s. Deficiencies Log

D. Reporting: After each meeting date, the Designer will distribute copies of minutes of the meeting to attendees. Significant discussions and agreements achieved will be recorded.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF SECTION 01 3119

SECTION 01 3200 - CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:

1. Submittals Schedule.
2. Contractor’s Construction Schedule.
3. Daily construction reports.
4. Field condition reports.
5. Construction Photographs.

B. Related Sections include the following:

1. Division 01 Section "Schedule of Values".
2. Division 01 Section "Project Management and Coordination" for submitting and distributing meeting and conference minutes.
3. Division 01 Section "Submittal Procedures" for submitting schedules and reports.
4. Division 01 Section "Quality Assurance, Control, and Documentation" for submitting a schedule of tests and inspections.
5. Division 01 Section "Closeout Procedures" for submitting “As-Built Schedule” as Project Record Documents at Project closeout.

1.3 DEFINITIONS

A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.

1. Critical Activity: An activity on the critical path that must start and finish on the planned early start and finish times.
2. Predecessor Activity: An activity that is linked to, and precedes another activity in the network.
3. Successor Activity: An activity that is linked to, and follows another activity in the network.

B. Schedule – A list of all distinct construction activities logically linked together to show the Contractor’s planned sequence of work.

1. Preliminary Schedule – Schedule showing the Contractor's planned sequence of work for the first 90 days of the project. This schedule is to include mobilization activities and procurement activities.
2. Initial Schedule – The first schedule showing the Contractor's planned sequence of all project activities. This schedule will serve as the baseline to measure progress of the work.
3. Schedule Update – An update of the initial schedule showing current progress of the project.

C. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. These relationships, and the activity durations, are used to calculate when activities can be performed, the duration of the project, and the critical path of the project.

D. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.

E. Float: The measure of leeway in starting and completing an activity.

1.4 SUBMITTALS

A. Qualification Data: For firms and persons specified in "Quality Assurance" Section to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and Owner/Commissioning Authorities, and other information specified.

B. Contractor's Construction Schedule: Initial schedule, of size required to display entire schedule for entire construction period.

1. Submit to Architect and Awarding Authority 3 printed copies and 1 working electronic copy of schedule, using software indicated, and labeled to comply with requirements for submittals. Include type of schedule (preliminary, initial (baseline) or updated) and date on label.

C. Submittals Schedule: Submit three copies of schedule. Arrange the following information in a tabular format:

1. Scheduled date for first submittal.
2. Specification Section number and title.
3. Submittal category (action or informational).
4. Name of subcontractor.
5. Description of the Work covered.
6. Scheduled date for Architect's final release or approval.

D. Daily Construction Reports: To be completed daily by contractor's project staff. Submit to Architect and Awarding Authority at bi-weekly intervals.

E. Field Condition Reports: Submit 2 copies of report to architect and 1 copy of report to City of Mobile PM at time of discovery of differing conditions.

F. Construction Photographs: To be reviewed at each project meeting and to be submitted in a binder and on an electronic disk with close-out documents.

1.5 QUALITY ASSURANCE

A. Scheduling Consultant Qualifications: An experienced specialist in CPM scheduling and reporting, with capability of producing CPM reports and diagrams within 24 hours of Architect's request. Reference Paragraph 3.1, A.

B. Pre-scheduling Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination." Review methods and procedures related to the preliminary construction schedule and Contractor's construction schedule, including, but not limited to, the following:

1. Review software limitations and content and format for reports.
2. Verify availability of qualified personnel needed to develop and update schedule.
3. Discuss constraints, including phasing, work stages, area separations, interim milestones, and partial Owner occupancy.
4. Review delivery dates for Owner-furnished products.
5. Review Allowances and time required for procurement and installation.
6. Review schedule for work of Owner's separate contracts.
7. Review time required for review of submittals and resubmittals.
8. Review requirements for tests and inspections by independent testing and inspecting agencies.
9. Review time required for completion and startup procedures.
10. Review and finalize list of construction activities to be included in schedule.
11. Review submittal requirements and procedures.
12. Review procedures for updating schedule.

1.6 COORDINATION

A. Coordinate preparation and processing of schedules and reports with performance of construction activities and with scheduling and reporting of separate contractors.

B. Coordinate Contractor's Construction Schedule with the Schedule of Values, list of subcontracts, Submittals Schedule, progress reports, payment requests, and other required schedules and reports.

1. Secure time commitments for performing critical elements of the Work from parties involved.
2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

PART 2 - PRODUCTS

2.1 SUBMITTALS SCHEDULE

A. Preparation: Submit to the Architect and Awarding Authority a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, resubmittal, ordering, manufacturing, fabrication, and delivery when establishing dates.

1. Coordinate Submittals Schedule with list of subcontracts, the Schedule of Values, and Contractor's Construction Schedule.

2. Final Submittal: Submit concurrently with the first complete submittal of Contractor's Construction Schedule.
   a. Submittal schedule to be incorporated directly into Contractor’s Construction Schedule.

2.2 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

A. Procedures: Comply with procedures contained in AGC's "Construction Planning & Scheduling" 2nd Edition. Use as a reference for additional definitions not included herein.

B. Time Frame: Extend schedule from date established for the Notice to Proceed to date of Substantial Completion to date of Final Completion.

1. Contract completion date can be changed, at the Awarding Authority’s discretion, by submission of a schedule that shows an early completion date, as allowed by the General Conditions to the Contract.

C. Activities: Activities should be broken down and organized by floor, by elevation, and by work area. Comply with the following:

1. Activity Duration: Define activities so no activity is longer than fifteen days, unless specifically allowed by Architect and Owner. An exception will be granted for procurement activities.

2. Procurement Activities: Include procurement process activities for long lead items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.

   a. Examples include, but are not limited to, structural components, limestone or pre-cast components, architectural trim, plumbing, heating/cooling/ventilation equipment, window systems, conveying equipment, specialty items, etc.

3. Submittal Review Time: Include review and resubmittal times indicated in Division 1 Section "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's Construction Schedule with Submittals Schedule.

4. Startup and Testing Time: Include not less than seven days for startup and testing.

5. Substantial Completion: Indicate completion in advance of date established for Substantial Completion and allow time for Architect's administrative procedures necessary for certification of Substantial Completion.

D. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule and show how the sequence of the Work is affected.

1. Phasing: Arrange list of activities on schedule by phase. Allowances: Include a separate activity for each allowance item detailing when information is required from Architect, and when the Work for the allowance must begin so as not to affect the completion date.
2. Work by Owner: Include a separate activity for each portion of the Work performed by Owner.
3. Products Ordered in Advance: Include a separate activity for each product. Include delivery date indicated in Division 1 Section "Summary." Delivery dates indicated stipulate the earliest possible delivery date.
4. Owner-Furnished Products: Include a separate activity for each product.
5. Work Restrictions: Show the effect of the following items on the schedule:
    a. Coordination with existing construction.
    b. Limitations of continued occupancies.
    c. Uninterruptible services.
    d. Partial occupancy before Substantial Completion.
    e. Use of premises restrictions.
    f. Provisions for future construction.
    g. Seasonal variations.
    h. Environmental control.

E. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, review inspections by review agencies, Pre-Install Conferences, Building Dry-in, temp-perm power, conditioned air, Certificate of Occupancy, Substantial Completion, and Final Completion.

F. Resource / staffing: Should the contractor’s progress fall materially behind the accepted initial schedule (30 days or more), the awarding authority can require the contractor to incorporate resource loading into the recovery schedule to indicate required staffing levels for each activity. This resource loading will show aggregate manpower requirements on a daily or weekly basis.

G. Cost Correlation: At the head of schedule, provide a cost correlation line, indicating planned and actual costs. On the line, show dollar volume of the Work performed as of dates used for preparation of payment requests.

1. Refer to Division 1 Section "Schedule of Values" for cost reporting and payment procedures.

H. Contract Modifications: For each proposed contract modification and concurrent with its submission, prepare a time-impact analysis to demonstrate the effect of the proposed change on the overall project schedule.

I. Computer Software: Prepare schedules using a program that has been developed specifically to manage construction schedules. See Article 9 of the General Conditions of the contract for further information.

2.3 CONTRACTORS CONSTRUCTION SCHEDULE (CPM SCHEDULE)

A. CPM Schedule: Prepare Contractor's Construction Schedule using a computerized, cost and resource loaded, time-scaled CPM network analysis program.

1. Submit schedule to the Architect and Awarding Authority in the time frame stipulated in the timeframe listed below.

a. For projects with an initial contract value of less than $5,000,000.00 – Initial schedule within 10 days of Issuance of Letter of intent or Notice to Proceed.

b. For projects with an initial contract value of $5,000,000.00 to $20,000,000.00 – Preliminary schedule within 10 days of Issuance of Letter of intent or Notice to Proceed, and Initial schedule within 30 days of Issuance of Letter of intent or Notice to Proceed.

c. For projects with an initial Contract value greater than $20,000,000.00 – Preliminary schedule within 15 days of Issuance of Letter of intent or Notice to Proceed, and Initial schedule within 45 days of Issuance of Letter of intent or Notice to Proceed.

2. Establish procedures for monitoring and updating CPM schedule and for reporting progress. Coordinate procedures with progress meetings and payment request dates.

3. Use "one workday" as the unit of time. Include a list of non-working days and holidays incorporated into the schedule.

4. Failure to include any work item required for the performance of this schedule shall not excuse the Contractor from completing all work within the applicable completion dates, regardless of Architect or Owner approval of the schedule.

B. CPM Schedule Preparation: Prepare a list of all activities required to complete the work. Determine the relationship of each activity to the other activities and link the activities together to indicate the logical sequence of work.

1. Activities: Indicate the estimated time duration, sequence requirements, and relationship of each activity in relation to other activities. Include estimated time frames for the following activities.

a. Preparation and processing of submittals.

b. Mobilization and demobilization.

c. Purchase of materials.

d. Delivery.

e. Fabrication.

f. Utility Interruptions.

g. Power outages or any utility shutdowns must be given advance notice of 30 days and must be included in the CPM schedule.

h. Installation.

i. Architect and Owner Inspections.

j. Work by Owner that may affect or be affected by Contractor's activities.

k. Testing and commissioning.

2. Critical Path Activities: Identify critical path activities, including those for interim completion dates. Schedule start and completion dates shall be consistent with Contract milestone dates.

3. Processing: Process data to produce output data on a computer-drawn, time-scaled network. Revise data, reorganize activity sequences and reproduce as often as necessary to produce the CPM schedule within the limitations of the Contract Time

4. Format: Mark the critical path: Locate the critical path near center of Network; locate paths with most float near the edges.

C. Initial Issue of Schedule: Sort the initial submission of the network diagram "early start" date. Identify clearly all critical activities. Identify critical activities. Prepare Tabulated reports showing the following:

1. Contractor or subcontractor and the Work or activity.
2. Description of activity.
3. Principal events of activity.
4. Immediate preceding and succeeding activities.
5. Early and late start dates.
6. Early and late finish dates.
7. Activity duration in workdays.
8. Total float or slack time.
9. Average size of workforce.

D. Schedule Updating: Concurrent with making revisions to schedule, prepare tabulated reports showing the following:

1. Identification of activities that have changed.
2. Changes in early and late start dates.
3. Changes in early and late finish dates.
4. Changes in activity durations in workdays.
5. Changes in the critical path.
6. Changes in total float or slack time.
7. Changes in cost-loading or resource-loading.
8. Changes in the Contract Time.

2.3 REPORTS

A. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:

1. List of subcontractors at Project site.
2. List of separate contractors at Project site.

3. Approximate count of personnel at Project site.
    a. Personnel count is to be broken down by subcontractor
4. Equipment at project site.
5. High and low temperatures and general weather conditions.
6. Accidents involving injury or damage to equipment or work in place
7. Meetings and significant decisions.
8. Unusual events.
9. Inspections of the work
10. Stoppages, delays, shortages, and losses.
11. Meter readings and similar recordings.
12. Emergency procedures enacted
13. Orders and requests of authorities having jurisdiction.
14. Change Orders received and implemented.
15. Construction Change Directives received.
16. Services connected and disconnected.
17. Equipment or system tests and startups.
    a. The City of Mobile intends to require the General Contractor's Daily Reporting to be done using a Call-in service administered by a third-party provider. The daily reporting will be required by all Superintendents listed in the project's minimum general contractor staffing requirements.

B. Field Condition Reports: Immediately on discovery of a difference between field conditions and the Contract Documents, prepare a detailed report. Submit with a request for information. Include a detailed description of the differing conditions and photographs illustrating the existing conditions, together with recommendations for changing the Contract Documents.

C. Construction Photographs: Photographs to document pre-existing conditions and to regularly document construction progress.

PART 3 - EXECUTION

3.1 CONTRACTOR'S CONSTRUCTION SCHEDULE

A. Scheduling Consultant: Engage a 3rd party scheduling consultant to provide planning, evaluation, and reporting using CPM scheduling.

1. In-House Option: Awarding Authority may waive the requirement to retain a consultant if Contractor employs skilled personnel with experience in CPM scheduling and reporting techniques. Submit qualifications.
2. Meetings: Scheduling consultant shall attend all meetings related to Project progress, alleged delays, and time impact.

B. Float: Float is a shared resource, available to both parties as needed. The Contractor shall not sequester shared float through such strategies as (a) extending activity duration estimates to consume available float, (b) using preferential logic, or (c) using extensive crew / resource sequencing, constraints, unnecessary milestones, leads or lags on logic ties, and hammock type activities. Since Float within the Construction Schedule is jointly owned, no time extensions will be granted nor delay damages paid until a delay occurs which extends the work beyond the contract completion date. Since float within the Construction Schedule is jointly owned, it is acknowledged that Trustees-caused delays on the project may be offset by Trustees-caused time savings (i.e., critical path submittals returned in less time than allowed by the contract, approval of substitution requests and credit changes which result in a savings of time to the Contractor, etc.). In such an event, the Contractor shall not be entitled to receive a time extension or delay damages until all Trustee-caused time savings are exceeded and the contract completion date is also exceeded.

C. Weather Delays: Weather delays will be calculated as days lost for events in excess of the NOAA 30-year average for Mobile, AL (1971 – 2000). Weather delays will not be granted for rain events less than 0.1 inches. Weather delays will not be granted for activities that are not shown to be on the critical path of the schedule at the time of the event.

D. Contractor's Construction Schedule Updating: At two-week intervals, update schedule to reflect actual construction progress and activities. Issue schedule one week before each regularly scheduled progress meeting.

1. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
2. As the Work progresses, indicate Actual Completion percentage for each activity.
3. At the end of the project, submit the As-Built schedule with actual start and finish dates to the owner as a close-out requirement.

E. Distribution: Distribute copies of approved schedule to Architect, Awarding Authority, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.

1. Post copies in Project meeting rooms and temporary field offices.
2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Awarding Authority to receive both paper and working electronic copy of each update.
3. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

F. Construction Schedule Software: The following CPM software shall be used.

1. For projects with a contract value of less than $5,000.000, use Microsoft Project, Primavera P6, or other comparable software products.
2. For projects with a contract value greater than $5,000,000, use Primavera P6 or other comparable software product.

3.2 CONSTRUCTION PHOTOGRAPHS

A. Photographic Process: Digital Imaging.

B. Date Stamp: Unless otherwise indicated, date and time stamp each photograph as it is being taken so stamp is integral to photograph.

C. Preconstruction Digital Photographs and Digital Video Recording: Before starting construction, take color photographs and digital video recording of Project site and affected City right-of-ways and surrounding properties and interior existing photos of affected areas from different vantage points. Show existing conditions adjacent to property.

D. Periodic Construction Photographs: Periodic digital color photographs and digital file to be submitted in duplicate on disc and in print form at each pay request with the following views:

1. Exterior views of all distinct elevations on a weekly basis. Photographs of each elevation are to be taken from the same location throughout the project.
2. Interior views of all levels of major spaces on a monthly basis. Of particular interest is the process of structure, mechanical (ductwork, equipment, plumbing, and sprinkler systems), electrical, partitions and interior finishes.
3. Roof: Views of all roof areas on a weekly basis during periods when work is occurring on or adjacent to the roof.
4. Field Office Prints: Retain one set of prints of periodic photographs in field office at Project site, available at all times for reference. Identify photographs the same as for those submitted to Architect.

END OF SECTION 01 3200

SECTION 01 3300 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.

B. Related Requirements:

1. Division 01 Section "Payment Procedures" for submitting Applications for Payment and the schedule of values.
2. Division 01 Section "Construction Progress Documentation" for submitting schedules and reports, including Contractor's construction schedule.
3. Division 01 Section "Operation and Maintenance Data" for submitting operation and maintenance manuals.
4. Division 01 Section "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.
5. Division 01 Section "Demonstration and Training" for submitting video recordings of demonstration of equipment and training of Owner's personnel.

C. Miscellaneous Requirements:

1. Brand Names: Submit for review a list of brand name materials proposed for use under section before any work under that Section is begun.

2. Progress Schedule: Submit per General Conditions

3. Schedule of Values: Submit on AIA Document G703. Furnish additional breakdowns as required by Article 28 of the General Conditions.

4. Closeout Submittals: See Section 01 7700.

5. List of Subcontractors: Submit for approval as indicated in General Conditions.

6. Evidence of Insurance: Submit as indicated in Supplementary General Conditions.

1.3 DEFINITIONS

A. Action Submittals: Written and graphic information and physical samples that require Architect's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals."

B. Informational Submittals: Written and graphic information and physical samples that do not require Architect's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as "informational submittals."

C. Portable Document Format (PDF): An open standard file format licensed by Adobe Systems used for representing documents in a device- independent and display resolution-independent fixed-layout document format.

1.4 ACTION SUBMITTALS

A. Submittal Schedule: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Architect and additional time for handling and reviewing submittals required by those corrections.

1. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.
2. Initial Submittal: Submit concurrently with preliminary construction schedule. Include submittals required during the first 60 days of construction. List those submittals required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.
3. Final Submittal: Submit concurrently with the first complete submittal of Contractor's construction schedule.

    a. Submit revised submittal schedule to reflect changes in current status and timing for submittals.

4. Format: Arrange the following information in a tabular format:

    a. Scheduled date for first submittal.
    b. Specification Section number and title.
    c. Submittal category: Action; informational.
    d. Name of subcontractor.
    e. Description of the Work covered.
    f. Scheduled date for Architect's final release or approval.
    g. Scheduled date of fabrication.
    h. Scheduled dates for purchasing.
    i. Scheduled dates for installation.
    j. Activity or event number.

1.5 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

A. Architect's Digital Data Files: Electronic digital data files of the Contract Drawings will not be provided by Architect for Contractor's use in preparing submittals.

B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.
4. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.

    a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

C. Processing Time: Allow time for submittal review, including time for re- submittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including re-submittals.

1. Initial Review: Allow 15 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
3. Re-submittal Review: Allow 10 days for review of each re-submittal.
4. Sequential Review: Where sequential review of submittals by Architect's consultants, Owner, or other parties is indicated, allow 21 days for initial review of each submittal.

D. Paper Submittals: Place a permanent label or title block on each submittal item for identification.

1. Indicate name of firm or entity that prepared each submittal on label or title block.
2. Provide a space approximately 6 by 8 inches on label or beside title block to record Contractor's review and approval markings and action taken by Architect.
3. Include the following information for processing and recording action taken:

    a. Project name.
    b. Date.
    c. Name of Architect.
    d. Name of Contractor.
    e. Name of subcontractor.
    f. Name of supplier.
    g. Name of manufacturer.
    h. Submittal number or other unique identifier, including revision identifier.

        1) Submittal number shall use Specification Section number followed by a decimal point and then a sequential number (e.g., 061000.01). Re-submittals shall include an alphabetic suffix after another decimal point

(e.g., 061000.01.A).

i. Number and title of appropriate Specification Section.
j. Drawing number and detail references, as appropriate.
k. Location(s) where product is to be installed, as appropriate.
l. Other necessary identification.

4. Additional Paper Copies: Unless additional copies are required for final submittal, and unless Architect observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.

5. Transmittal for Paper Submittals: Assemble each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Architect will discard submittals received from sources other than Contractor.

a. Transmittal Form for Paper Submittals: Use Owner's transmittal form generated by Prolog.
b. Transmittal Form for Paper Submittals: Provide locations on form for the following information:

1) Project name.
2) Date.
3) Destination (To:).
4) Source (From:).
5) Name and address of Architect.
6) Name of Contractor.
7) Name of firm or entity that prepared submittal.
8) Names of subcontractor, manufacturer, and supplier.
9) Category and type of submittal.
10) Submittal purpose and description.
11) Specification Section number and title.
12) Specification paragraph number or drawing designation and generic name for each of multiple items.
13) Drawing number and detail references, as appropriate.
14) Indication of full or partial submittal.
15) Transmittal number, numbered consecutively.
16) Submittal and transmittal distribution record.
17) Remarks.
18) Signature of transmitter.

E. Options: Identify options requiring selection by Architect.

F. Deviations and Additional Information: On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Architect on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same

identification information as related submittal.

G. Re-submittals: Make re-submittals in same form and number of copies as initial submittal.

1. Note date and content of previous submittal.
2. Note date and content of revision in label or title block and clearly indicate extent of revision.
3. Resubmit submittals until they are marked with approval notation from Architect's action stamp.

H. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

I. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Architect's action stamp.

PART 2 – PRODUCTS

2.1 SUBMITTAL PROCEDURES

A. General Submittal Procedure Requirements: Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.

1. Action Submittals: Submit seven paper copies of each submittal unless otherwise indicated. Architect, will return four copies. Informational Submittals: Submit three paper copies of each submittal unless otherwise indicated. Architect will not return copies.

2. Certificates and Certifications Submittals: Provide a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
   a. Provide a notarized statement on original paper copy certificates and certifications where indicated.

B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard published data are not suitable for use, submit as Shop Drawings, not as Product Data.
2. Mark each copy of each submittal to show which products and options are applicable.
3. Include the following information, as applicable:

   a. Manufacturer's catalog cuts.

b. Manufacturer's product specifications.
c. Standard color charts.
d. Statement of compliance with specified referenced standards.
e. Testing by recognized testing agency.
f. Application of testing agency labels and seals.
g. Notation of coordination requirements.
h. Availability and delivery time information.

4. For equipment, include the following in addition to the above, as applicable:

a. Wiring diagrams showing factory-installed wiring.
b. Printed performance curves.
c. Operational range diagrams.
d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.

5. Submit Product Data before or concurrent with Samples.
6. Submit Product Data in the following format:
a. Seven paper copies of Product Data unless otherwise indicated. Architect, will return four copies.

C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.

1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:

a. Identification of products.
b. Schedules.
c. Compliance with specified standards.
d. Notation of coordination requirements.
e. Notation of dimensions established by field measurement.
f. Relationship and attachment to adjoining construction clearly indicated.
g. Seal and signature of professional engineer if specified.

2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches, but no larger than 30 by 42 inches.
3. Submit Shop Drawings in the following format:
a. Seven opaque (bond) copies of each submittal. Architect will return four copies.

D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.

1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
2. Identification: Attach label on unexposed side of Samples that includes the

following:

a. Generic description of Sample.
b. Product name and name of manufacturer.
c. Sample source.
d. Number and title of applicable Specification Section.
e. Specification paragraph number and generic name of each item.

3. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
   a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
   b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.

4. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
   a. Number of Samples: Submit three full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.

5. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
   a. Number of Samples: Submit seven sets of Samples. Architect will retain three Sample sets; remainder will be returned. Mark up and retain one returned Sample set as a project record sample.
      1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
      2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.

E. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:

1. Type of product. Include unique identifier for each product indicated in the Contract Documents or assigned by Contractor if none is indicated.
2. Manufacturer and product name, and model number if applicable.
3. Number and name of room or space.
4. Location within room or space.
5. Submit product schedule in the following format:
   a. Seven paper copies of product schedule or list unless otherwise indicated. Architect will return four copies.

F. Site Prep Approval Sign-Off Sheet: Completed by contractor and signed off by Field Coordinator.

G. List of Subcontractors: Submit for approval as indicated in General Conditions.

H. Evidence of Insurance: Submit as indicated in Supplementary General Conditions.

I. Brand Names: Submit for review a list of brand name materials proposed for use under Section before any work under that Section is begun.

J. Coordination Drawing Submittals: Comply with requirements specified in Division 01 Section "Project Management and Coordination."

K. Contractor's Construction Schedule: Comply with requirements specified in Division 01 Section "Progress Documentation."

L. Application for Payment and Schedule of Values: Comply with requirements specified in Division 01 Section "Payment Procedures."
   1. Furnish additional breakdowns as required by Article 28 of the General Conditions.

M. Test and Inspection Reports and Schedule of Tests and Inspections Submittals: Comply with requirements specified in Division 01 Section "Quality Requirements."

N. Closeout Submittals and Maintenance Material Submittals: Comply with requirements specified in Division 01 Section "Closeout Procedures."

O. Maintenance Data: Comply with requirements specified in Division 01 Section "Operation and Maintenance Data."

P. Operation and Maintenance Manuals: Operation and Maintenance Manuals are to be submitted for review and approval during construction. They are to be consolidated for the entire project and submitted in the specified format once the shop drawings and product data submissions are complete but no later than 30 days prior to contract completion date.

Q. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified.

R. Welding Certificates: Prepare written certification that welding procedures and personnel

comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on AWS forms. Include names of firms and personnel certified.

S. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.

T. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.

U. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.

V. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.

W. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.

X. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.

Y. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:

1. Name of evaluation organization.
2. Date of evaluation.
3. Time period when report is in effect.
4. Product and manufacturers' names.
5. Description of product.
6. Test procedures and results.
7. Limitations of use.

Z. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.

AA. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.

BB. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.

CC. Design Data: Prepare and submit written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

2.2 DELEGATED-DESIGN SERVICES

A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.

1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.

B. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit seven paper copies of certificate, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.

1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

A. Action and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.

B. Submit for review as required in detail specifications, but only after affixing signature of approval thereof; otherwise material will be returned disapproved. Contractor’s approval stamp must represent that the item(s) complies with specifications criteria, and has been checked and coordinated with all parts of the Work. Revise and resubmit until Architect’s/Engineer’s release is secured.

C. All shop drawings and schedules, accompanied by a letter of transmittal containing project number, number of drawings, titles, or other pertinent data, shall be submitted to the Awarding Authority through the Architect in quintuplicate by the Contractor, with his stamp of approval thereon, sufficiently in advance of construction requirements to allow checking, correcting, re-submitting, and rechecking

D. Project Closeout and Maintenance Material Submittals: See requirements in Division 01 Section "Closeout Procedures."

E. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 ARCHITECT'S ACTION

A. Action Submittals: Architect will review each submittal, make marks to indicate corrections or revisions required, and return it. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action, as follows:
1. Not Subject to Review.
2. Approved.
3. Approved as Noted.
4. Revise/Resubmit.
5. Rejected/Resubmit.

B. Informational Submittals: Architect will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.

C. Architect/Engineer will review submittals for design only, and will assume no responsibility for dimensions, quantities or erection procedures indicated. Contractor's responsibility for indicated deviations from contract requirements will not be relieved by Architect's/Engineer's review of shop drawings, etc. unless the deviation is specifically noted in the letter of transmittal, and express written approval is returned. Review of a separate item will not constitute review of an assembly in which the item functions. Submit data on all related items simultaneously so as to facilitate logical review of all items in that section are released. One copy of each submittal bearing the final review stamp of Architect/Engineer shall be kept at the project office and shall be maintained in good condition. No submittal other than those stamped "Approval as Noted" shall be on the job for any purpose.

D. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Architect.

E. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for re-submittal without review.

F. Submittals not required by the Contract Documents may be returned by the Architect without action.

G. Samples: Where required, submit two of each item clearly labeled as to manufacturer, quality and job. The Architect/Engineer will retain one sample for comparison with bulk shipments, and may procure certain test samples from stock piles at the job site. Failure of any item to meet specified requirements will be cause to reject for use under this contract any further materials of the same brand or make. Rejected material already incorporated shall be subject to removal and replacement, or at the Owner's option may be left in place and Contract price adjusted.

H. Samples for Color Selection: Unless the precise color and pattern is specified, wherever a choice exists, submit accurate color and all items well in advance of the need for the first

selection (not later than 30 days after award). With very minor exceptions, no color selections will be made until samples for all items requiring selection have been submitted.

I. Operation and Maintenance Manuals: Operation and Maintenance Manuals are to be submitted for review and approval during construction. They are to be consolidated for the entire project and submitted in the specified format once the shop drawings and product data submissions are complete but not later than 30 days prior to contract completion date.

END OF SECTION 01 3300

SECTION 01 4000 - QUALITY ASSURANCE, CONTROL, & DOCUMENTATION

PART 1 – GENERAL

1.01 SUMMARY

A. This section includes administrative and procedural requirements for quality assurance and quality control.

1.02 GENERAL

A. Control System: The Contractor shall establish and maintain a system for documenting, monitoring, inspecting, verifying, and testing of the work and that of his subcontractors to ensure that all applicable requirements of the contract documents are met. The Contractor shall be diligent to ensure that the quality of workmanship is satisfactory, that the installation meets all manufacturer requirements, that dimensional requirements are met, that defective materials are not used, and that all required protection and control and laboratory testing procedures are affected. Where specific testing procedures are not stipulated, the Contractor shall establish and conduct a test procedure to ensure adherence to specified quality.

B. Chain of Control: The Contractor shall plan, coordinate, execute, and examine the work to ensure the complete, workmanlike, and warrantable installation of all materials in a system or element of the construction.

1. The Contractor shall plan, coordinate, execute, and examine the work to ensure that all underlying, substrate, or contiguous work is installed as required to meet the tolerances and requirements for the correct installation of subsequent work.
2. It is the responsibility of the Contractor to advise the Architect no later than the submittal phase of any discrepancies in the requirements or tolerances of materials or components in a system or element of the construction.

PART 2 – PRODUCTS

2.01 QA / QC PROGRAM

A. The Contractor shall submit for Owner's Approval their program format 10 (ten) days from Notice to Proceed.

B. Once work has begun, the QA / QC manual must be kept up-to-date and approved by Owner's Field Coordinator and Project Manager prior to the current Pay Application being approved.

2.02 MOCKUPS

A. Mock-ups shall be used to judge workmanship, execution of details, and colors for all exterior material elements. No work shall be started on any of the exterior material elements until such time the mock-up is completed by the Contractor and accepted / approved by the City of Mobile.

2.03 DOCUMENTATION

A. Documentation shall be by specification section or by system or element of the construction. The documentation shall be formatted in a comprehensive and collated manner to ensure ease of use and reference. A Table of Contents shall be provided. The Contractor's system shall include, but is not limited to the following:

B. Pre-Installation Conference

C. Agenda shall include Review of items 1 through 13 below

1. Inspection and Testing requirements

2. Correct environmental conditions for execution of the work and protection of the completed installation.
3. Schedule including required inspections.
4. Requirements and tolerances of underlying, substrate, or contiguous work.
5. Manufacturer’s Recommendations, Requirements, and Instructions.
6. Review of requirements to ensure an enforceable warranty
7. *Manufacturers' Technical Representative shall be present whenever possible and when required by Specification Section*
8. Specifications
9. Disposition of Submittals, Product Data, Shop Drawings and Mockups (when required).
10. Test Results
11. Packaging labels from Materials where possible
12. Periodic, Dated Photos of the work being performed and any other documentation that pertains to the warranty of the material or structure
13. Samples of the material when reasonable or specified.

PART 3 – EXECUTION

3.01 PRE-CONSTRUCTION QUALITY CONTROL MEETING

A. The Contractor shall schedule a meeting with the Awarding Authority, Architect, Project Superintendent, and all major trade Superintendents to review the contractor’s proposed QA/QC system and requirements for compliance.

3.02 INSPECTIONS

A. The Contractor shall make an initial inspection of each phase of work as soon as a representative portion has been completed, and the Contractor shall make follow-up inspections as required, to ensure that an acceptable quality of work is established and maintained.

B. The Contractor shall perform a pre-final inspection, prepare a punch list, and work off all items prior to A/E inspection. Contractor shall provide copy of completed report, certifying its completion to the Architect prior to the Architect beginning his inspections.

C. The Contractor shall coordinate and plan inspections by the Architect and Awarding Authority in a timely manner to ensure that all parties can be scheduled so as not to impede the flow of the work.

3.03 CLOSEOUT:

A. The documents generated through this process are to be submitted as part of the closeout documents.

B. Provide a list of the following for all equipment including but not limited to the following:
   1. Model Number
   2. Serial Number
   3. Description
   4. Contract Document Reference

C. Filter and Belt list for each air handler

END OF SECTION 01 4000

SECTION 01 4200 - REFERENCES

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

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

1.2 DEFINITIONS

A. General: Basic Contract definitions are included in the Conditions of the Contract.

B. "Approved": When used to convey Architect's action on Contractor's submittals, applications, and requests, "approved" is limited to Architect's duties and responsibilities as stated in the Conditions of the Contract.

C. "Directed": A command or instruction by Architect. Other terms including "requested," "authorized," "selected," "required," and "permitted" have the same meaning as "directed."

D. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."

E. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.

F. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.

G. "Install": Operations at Project site including unloading, temporarily storing, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.

H. "Provide": Furnish and install, complete and ready for the intended use.

I. "Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

1.3 INDUSTRY STANDARDS

A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.

B. Publication Dates: Comply with standards in effect as of date of the Contract Documents unless otherwise indicated.

C. Copies of Standards: Each entity engaged in construction on Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.

1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.

1.4 ABBREVIATIONS AND ACRONYMS

A. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities indicated in Thomson Gale's "Encyclopedia of Associations" or in Columbia Books' "National Trade & Professional Associations of the U.S."

B. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Names, telephone numbers, and Web sites are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

AA	Aluminum Association, Inc. (The) www.aluminum.org	(703) 358-2960
AAADM	American Association of Automatic Door Manufacturers www.aaadm.com	(216) 241-7333
AABC	Associated Air Balance Council www.aabchq.com	(202) 737-0202
AAMA	American Architectural Manufacturers Association www.aamanet.org	(847) 303-5664
AASHTO	American Association of State Highway and Transportation Officials www.transportation.org	(202) 624-5800
AATCC	American Association of Textile Chemists and Colorists www.aatcc.org	(919) 549-8141
ABAA	Air Barrier Association of America www.airbarrier.org	(866) 956-5888
ABMA	American Bearing Manufacturers Association www.abma-dc.org	(202) 367-1155
ACI	American Concrete Institute www.concrete.org	(248) 848-3700

ACPA	American Concrete Pipe Association www.concrete-pipe.org	(972) 506-7216
AEIC	Association of Edison Illuminating Companies, Inc. (The) www.aeic.org	(205) 257-2530
AF&PA	American Forest & Paper Association www.afandpa.org	(800) 878-8878 (202) 463-2700
AGA	American Gas Association www.aga.org	(202) 824-7000
AGC	Associated General Contractors of America (The) www.agc.org	(703) 548-3118
AHA	American Hardboard Association (Now part of CPA)	
AHAM	Association of Home Appliance Manufacturers www.aham.org	(202) 872-5955
AI	Asphalt Institute www.asphaltinstitute.org	(859) 288-4960
AIA	American Institute of Architects (The) www.aia.org	(800) 242-3837 (202) 626-7300
AISC	American Institute of Steel Construction www.aisc.org	(800) 644-2400 (312) 670-2400
AISI	American Iron and Steel Institute www.steel.org	(202) 452-7100
AITC	American Institute of Timber Construction www.aitc-glulam.org	(303) 792-9559
ALCA	Associated Landscape Contractors of America (Now PLANET - Professional Landcare Network)	
ALSC	American Lumber Standard Committee, Incorporated www.alsc.org	(301) 972-1700
AMCA	Air Movement and Control Association International, Inc. www.amca.org	(847) 394-0150
ANSI	American National Standards Institute www.ansi.org	(202) 293-8020
AOSA	Association of Official Seed Analysts, Inc. www.aosaseed.com	(405) 780-7372

APA	Architectural Precast Association www.archprecast.org	(239) 454-6989
APA	APA - The Engineered Wood Association www.apawood.org	(253) 565-6600
APA EWS	APA - The Engineered Wood Association; Engineered Wood Systems (See APA - The Engineered Wood Association)	
API	American Petroleum Institute www.api.org	(202) 682-8000
ARI	Air-Conditioning & Refrigeration Institute www.ari.org	(703) 524-8800
ARMA	Asphalt Roofing Manufacturers Association www.asphaltroofing.org	(202) 207-0917
ASCE	American Society of Civil Engineers www.asce.org	(800) 548-2723 (703) 295-6300
ASCE/SEI	American Society of Civil Engineers/Structural Engineering Institute (See ASCE)	
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers www.ashrae.org	(800) 527-4723 (404) 636-8400
ASME	ASME International (American Society of Mechanical Engineers International) www.asme.org	(800) 843-2763 (973) 882-1170
ASSE	American Society of Sanitary Engineering www.asse-plumbing.org	(440) 835-3040
ASTM	ASTM International (American Society for Testing and Materials International) www.astm.org	(610) 832-9500
AWCI	Association of the Wall and Ceiling Industry www.awci.org	(703) 534-8300
AWCMA	American Window Covering Manufacturers Association (Now WCMA)	
AWI	Architectural Woodwork Institute www.awinet.org	(571) 323-3636
AWPA	American Wood Protection Association	(205) 733-4077

	(Formerly: American Wood Preservers' Association) www.awpa.com	
AWS	American Welding Society www.aws.org	(800) 443-9353 (305) 443-9353
AWWA	American Water Works Association www.awwa.org	(800) 926-7337 (303) 794-7711
BHMA	Builders Hardware Manufacturers Association www.buildershardware.com	(212) 297-2122
BIA	Brick Industry Association (The) www.bia.org	(703) 620-0010
BICSI	BICSI, Inc. www.bicsi.org	(800) 242-7405 (813) 979-1991
BIFMA	BIFMA International (Business and Institutional Furniture Manufacturer's Association International) www.bifma.com	(616) 285-3963
BISSC	Baking Industry Sanitation Standards Committee www.bissc.org	(866) 342-4772
BWF	Badminton World Federation (Formerly: IBF - International Badminton Federation) www.internationalbadminton.org	6-03-9283 7155
CCC	Carpet Cushion Council www.carpetcushion.org	(610) 527-3880
CDA	Copper Development Association www.copper.org	(800) 232-3282 (212) 251-7200
CEA	Canadian Electricity Association www.canelect.ca	(613) 230-9263
CEA	Consumer Electronics Association www.ce.org	(866) 858-1555 (703) 907-7600
CFFA	Chemical Fabrics & Film Association, Inc. www.chemicalfabricsandfilm.com	(216) 241-7333
CGA	Compressed Gas Association www.cganet.com	(703) 788-2700
CIMA	Cellulose Insulation Manufacturers Association www.cellulose.org	(888) 881-2462 (937) 222-2462

CISCA	Ceilings & Interior Systems Construction Association www.cisca.org	(630) 584-1919
CISPI	Cast Iron Soil Pipe Institute www.cispi.org	(423) 892-0137
CLFMI	Chain Link Fence Manufacturers Institute www.chainlinkinfo.org	(301) 596-2583
CRRC	Cool Roof Rating Council www.coolroofs.org	(866) 465-2523 (510) 485-7175
CPA	Composite Panel Association www.pbmdf.com	(301) 670-0604
CPPA	Corrugated Polyethylene Pipe Association www.cppa-info.org	(800) 510-2772 (202) 462-9607
CRI	Carpet and Rug Institute (The) www.carpet-rug.com	(800) 882-8846 (706) 278-3176
CRSI	Concrete Reinforcing Steel Institute www.crsi.org	(847) 517-1200
CSA	Canadian Standards Association	(800) 463-6727 (416) 747-4000
CSA	CSA International (Formerly: IAS - International Approval Services) www.csa-international.org	(866) 797-4272 (416) 747-4000
CSI	Cast Stone Institute www.caststone.org	(717) 272-3744
CSI	Construction Specifications Institute (The) www.csinet.org	(800) 689-2900 (703) 684-0300
CSSB	Cedar Shake & Shingle Bureau www.cedarbureau.org	(604) 820-7700
CTI	Cooling Technology Institute (Formerly: Cooling Tower Institute) www.cti.org	(281) 583-4087
DHI	Door and Hardware Institute www.dhi.org	(703) 222-2010
EIA	Electronic Industries Alliance www.eia.org	(703) 907-7500
EIMA	EIFS Industry Members Association	(800) 294-3462

	www.eima.com	(770) 968-7945
EJCDC	Engineers Joint Contract Documents Committee www.ejdc.org	(703) 295-5000
EJMA	Expansion Joint Manufacturers Association, Inc. www.ejma.org	(914) 332-0040
ESD	ESD Association (Electrostatic Discharge Association) www.esda.org	(315) 339-6937
ETL SEMCO	Intertek ETL SEMCO (Formerly: ITS - Intertek Testing Service NA) www.intertek.com	(800) 967-5352
FIBA	Federation Internationale de Basketball (The International Basketball Federation) www.fiba.com	41 22 545 00 00
FIVB	Federation Internationale de Volleyball (The International Volleyball Federation) www.fivb.ch	41 21 345 35 35
FM Approvals	FM Approvals LLC www.fmglobal.com	(781) 762-4300
FM Global	FM Global (Formerly: FMG - FM Global) www.fmglobal.com	(401) 275-3000
FMRC	Factory Mutual Research (Now FM Global)	
FRSA	Florida Roofing, Sheet Metal & Air Conditioning Contractors Association, Inc. www.floridaroof.com	(407) 671-3772
FSA	Fluid Sealing Association www.fluidsealing.com	(610) 971-4850
FSC	Forest Stewardship Council www.fsc.org	49 228 367 66 0
GA	Gypsum Association www.gypsum.org	(202) 289-5440
GANA	Glass Association of North America www.glasswebsite.com	(785) 271-0208
GRI	(Part of GSI)	

GS	Green Seal www.greenseal.org	(202) 872-6400
GSI	Geosynthetic Institute www.geosynthetic-institute.org	(610) 522-8440
HI	Hydraulic Institute www.pumps.org	(973) 267-9700
HI	Hydronics Institute www.gamanet.org	(908) 464-8200
HMMA	Hollow Metal Manufacturers Association (Part of NAAMM)	
HPVA	Hardwood Plywood & Veneer Association www.hpva.org	(703) 435-2900
HPW	H. P. White Laboratory, Inc. www.hpwhite.com	(410) 838-6550
IAS	International Approval Services (Now CSA International)	
IBF	International Badminton Federation (Now BWF)	
ICEA	Insulated Cable Engineers Association, Inc. www.icea.net	(770) 830-0369
ICRI	International Concrete Repair Institute, Inc. www.icri.org	(847) 827-0830
IEC	International Electrotechnical Commission www.iec.ch	41 22 919 02 11
IEEE	Institute of Electrical and Electronics Engineers, Inc. (The) www.ieee.org	(212) 419-7900
IESNA	Illuminating Engineering Society of North America www.iesna.org	(212) 248-5000
IEST	Institute of Environmental Sciences and Technology www.iest.org	(847) 255-1561
IGCC	Insulating Glass Certification Council www.igcc.org	(315) 646-2234
IGMA	Insulating Glass Manufacturers Alliance www.igmaonline.org	(613) 233-1510

ILI	Indiana Limestone Institute of America, Inc. www.iliai.com	(812) 275-4426
ISO	International Organization for Standardization www.iso.ch	41 22 749 01 11
	Available from ANSI www.ansi.org	(202) 293-8020
ISSFA	International Solid Surface Fabricators Association www.issfa.net	(877) 464-7732 (702) 567-8150
ITS	Intertek Testing Service NA (Now ETL SEMCO)	
ITU	International Telecommunication Union www.itu.int/home	41 22 730 51 11
KCMA	Kitchen Cabinet Manufacturers Association www.kcma.org	(703) 264-1690
LMA	Laminating Materials Association (Now part of CPA)	
LPI	Lightning Protection Institute www.lightning.org	(800) 488-6864
MBMA	Metal Building Manufacturers Association www.mbma.com	(216) 241-7333
MFMA	Maple Flooring Manufacturers Association, Inc. www.maplefloor.org	(888) 480-9138
MFMA	Metal Framing Manufacturers Association, Inc. www.metalframingmfg.org	(312) 644-6610
MH	Material Handling (Now MHIA)	
MHIA	Material Handling Industry of America www.mhia.org	(800) 345-1815 (704) 676-1190
MIA	Marble Institute of America www.marble-institute.com	(440) 250-9222
MPI	Master Painters Institute www.paintinfo.com	(888) 674-8937 (604) 298-7578
MSS	Manufacturers Standardization Society of The Valve and Fittings Industry Inc.	(703) 281-6613

	www.mss-hq.com	
NAAMM	National Association of Architectural Metal Manufacturers www.naamm.org	(630) 942-6591
NACE	NACE International (National Association of Corrosion Engineers International) www.nace.org	(800) 797-6623 (281) 228-6200
NADCA	National Air Duct Cleaners Association www.nadca.com	(202) 737-2926
NAGWS	National Association for Girls and Women in Sport www.aahperd.org/nagws/	(800) 213-7193, ext. 453
NAIMA	North American Insulation Manufacturers Association www.naima.org	(703) 684-0084
NBGQA	National Building Granite Quarries Association, Inc. www.nbgqa.com	(800) 557-2848
NCAA	National Collegiate Athletic Association (The) www.ncaa.org	(317) 917-6222
NCMA	National Concrete Masonry Association www.ncma.org	(703) 713-1900
NCPI	National Clay Pipe Institute www.ncpi.org	(262) 248-9094
NCTA	National Cable & Telecommunications Association www.ncta.com	(202) 775-2300
NEBB	National Environmental Balancing Bureau www.nebb.org	(301) 977-3698
NECA	National Electrical Contractors Association www.necanet.org	(301) 657-3110
NeLMA	Northeastern Lumber Manufacturers' Association www.nelma.org	(207) 829-6901
NEMA	National Electrical Manufacturers Association www.nema.org	(703) 841-3200
NETA	InterNational Electrical Testing Association www.netaworld.org	(888) 300-6382 (269) 488-6382
NFHS	National Federation of State High School Associations www.nfhs.org	(317) 972-6900

NFPA	NFPA (National Fire Protection Association) www.nfpa.org	(800) 344-3555 (617) 770-3000
NFRC	National Fenestration Rating Council www.nfrc.org	(301) 589-1776
NGA	National Glass Association www.glass.org	(866) 342-5642 (703) 442-4890
NHLA	National Hardwood Lumber Association www.natlhardwood.org	(800) 933-0318 (901) 377-1818
NLGA	National Lumber Grades Authority www.nlga.org	(604) 524-2393
NOFMA	NOFMA: The Wood Flooring Manufacturers Association (Formerly: National Oak Flooring Manufacturers Association) www.nofma.com	(901) 526-5016
NOMMA	National Ornamental & Miscellaneous Metals Association www.nomma.org	(888) 516-8585
NRCA	National Roofing Contractors Association www.nrca.net	(800) 323-9545 (847) 299-9070
NRMCA	National Ready Mixed Concrete Association www.nrmca.org	(888) 846-7622 (301) 587-1400
NSF	NSF International (National Sanitation Foundation International) www.nsf.org	(800) 673-6275 (734) 769-8010
NSSGA	National Stone, Sand & Gravel Association www.nssga.org	(800) 342-1415 (703) 525-8788
NTMA	National Terrazzo & Mosaic Association, Inc. (The) www.ntma.com	(800) 323-9736 (540) 751-0930
NTRMA	National Tile Roofing Manufacturers Association (Now TRI)	
NWWDA	National Wood Window and Door Association (Now WDMA)	
OPL	Omega Point Laboratories, Inc. (Now ITS)	
PCI	Precast/Prestressed Concrete Institute www.pci.org	(312) 786-0300

PDCA	Painting & Decorating Contractors of America www.pdca.com	(800) 332-7322 (314) 514-7322
PDI	Plumbing & Drainage Institute www.pdionline.org	(800) 589-8956 (978) 557-0720
PGI	PVC Geomembrane Institute http://pgi-tp.ce.uiuc.edu	(217) 333-3929
PLANET	Professional Landcare Network (Formerly: ACLA - Associated Landscape Contractors of America) www.landcarenetwork.org	(800) 395-2522 (703) 736-9666
PTI	Post-Tensioning Institute www.post-tensioning.org	(602) 870-7540
RCSC	Research Council on Structural Connections www.boltcouncil.org	
RFCI	Resilient Floor Covering Institute www.rfci.com	(301) 340-8580
RIS	Redwood Inspection Service www.redwoodinspection.com	(888) 225-7339 (415) 382-0662
SAE	SAE International www.sae.org	(877) 606-7323 (724) 776-4841
SDI	Steel Deck Institute www.sdi.org	(847) 458-4647
SDI	Steel Door Institute www.steeldoor.org	(440) 899-0010
SEFA	Scientific Equipment and Furniture Association www.sefalabs.com	(877) 294-5424 (516) 294-5424
SEI/ASCE	Structural Engineering Institute/American Society of Civil Engineers (See ASCE)	
SGCC	Safety Glazing Certification Council www.sgcc.org	(315) 646-2234
SIA	Security Industry Association www.siaonline.org	(866) 817-8888 (703) 683-2075
SIGMA	Sealed Insulating Glass Manufacturers Association (Now IGMA)	

SJI	Steel Joist Institute www.steeljoist.org	(843) 626-1995
SMA	Screen Manufacturers Association www.smacentral.org	(561) 533-0991
SMACNA	Sheet Metal and Air Conditioning Contractors' National Association www.smacna.org	(703) 803-2980
SMPTE	Society of Motion Picture and Television Engineers www.smpte.org	(914) 761-1100
SPFA	Spray Polyurethane Foam Alliance (Formerly: SPI/SPFD - The Society of the Plastics Industry, Inc.; Spray Polyurethane Foam Division) www.sprayfoam.org	(800) 523-6154
SPIB	Southern Pine Inspection Bureau (The) www.spib.org	(850) 434-2611
SPRI	Single Ply Roofing Industry www.spri.org	(781) 647-7026
SSINA	Specialty Steel Industry of North America www.ssina.com	(800) 982-0355 (202) 342-8630
SSPC	SSPC: The Society for Protective Coatings www.sspc.org	(877) 281-7772 (412) 281-2331
STI	Steel Tank Institute www.steeltank.com	(847) 438-8265
SWI	Steel Window Institute www.steelwindows.com	(216) 241-7333
SWRI	Sealant, Waterproofing, & Restoration Institute www.swrionline.org	(816) 472-7974
TCA	Tile Council of America, Inc. (Now TCNA)	
TCNA	Tile Council of North America, Inc. www.tileusa.com	(864) 646-8453
TIA/EIA	Telecommunications Industry Association/Electronic Industries Alliance www.tiaonline.org	(703) 907-7700
TMS	The Masonry Society	(303) 939-9700

	www.masonrysociety.org	
TPI	Truss Plate Institute, Inc. www.tpinst.org	(703) 683-1010
TPI	Turfgrass Producers International www.turfgrasssod.org	(800) 405-8873 (847) 649-5555
TRI	Tile Roofing Institute www.tileroofing.org	(312) 670-4177
UL	Underwriters Laboratories Inc. www.ul.com	(877) 854-3577 (847) 272-8800
UNI	Uni-Bell PVC Pipe Association www.uni-bell.org	(972) 243-3902
USAV	USA Volleyball www.usavolleyball.org	(888) 786-5539 (719) 228-6800
USGBC	U.S. Green Building Council www.usgbc.org	(800) 795-1747
USITT	United States Institute for Theatre Technology, Inc. www.usitt.org	(800) 938-7488 (315) 463-6463
WASTEC	Waste Equipment Technology Association www.wastec.org	(800) 424-2869 (202) 244-4700
WCLIB	West Coast Lumber Inspection Bureau www.wclib.org	(800) 283-1486 (503) 639-0651
WCMA	Window Covering Manufacturers Association www.wcmanet.org	(212) 297-2122
WCSC	Window Covering Safety Council (Formerly: WCMA - Window Covering Manufacturers Association) www.windowcoverings.org	(800) 506-4636 (212) 297-2109
WDMA	Window & Door Manufacturers Association (Formerly: NWWDA - National Wood Window and Door Association) www.wdma.com	(800) 223-2301 (847) 299-5200
WI	Woodwork Institute (Formerly: WIC - Woodwork Institute of California) www.wicnet.org	(916) 372-9943
WIC	Woodwork Institute of California (Now WI)	

WMMPA	Wood Moulding & Millwork Producers Association www.wmmpa.com	(800) 550-7889 (530) 661-9591
WSRCA	Western States Roofing Contractors Association www.wsrca.com	(800) 725-0333 (650) 570-5441
WWPA	Western Wood Products Association www.wwpa.org	(503) 224-3930

C. Code Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Names, telephone numbers, and Web sites are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

IAPMO	International Association of Plumbing and Mechanical Officials www.iapmo.org	(909) 472-4100
ICC	International Code Council www.iccsafe.org	(888) 422-7233
ICC-ES	ICC Evaluation Service, Inc. www.icc-es.org	(800) 423-6587 (562) 699-0543
UBC	Uniform Building Code (See ICC)	

D. Federal Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Names, telephone numbers, and Web sites are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

CE	Army Corps of Engineers www.usace.army.mil	(202) 761-0011
CPSC	Consumer Product Safety Commission www.cpsc.gov	(800) 638-2772 (301) 504-7923
DOC	Department of Commerce www.commerce.gov	(202) 482-2000
DOD	Department of Defense http://.dodssp.daps.dla.mil	(215) 697-6257
DOE	Department of Energy www.energy.gov	(202) 586-9220
EPA	Environmental Protection Agency www.epa.gov	(202) 272-0167
FAA	Federal Aviation Administration	(866) 835-5322

	www.faa.gov	
FCC	Federal Communications Commission www.fcc.gov	(888) 225-5322
FDA	Food and Drug Administration www.fda.gov	(888) 463-6332
GSA	General Services Administration www.gsa.gov	(800) 488-3111
HUD	Department of Housing and Urban Development www.hud.gov	(202) 708-1112
LBL	Lawrence Berkeley National Laboratory www.lbl.gov	(510) 486-4000
NCHRP	National Cooperative Highway Research Program (See TRB)	
NIST	National Institute of Standards and Technology www.nist.gov	(301) 975-6478
OSHA	Occupational Safety & Health Administration www.osha.gov	(800) 321-6742 (202) 693-1999
PBS	Public Buildings Service (See GSA)	
PHS	Office of Public Health and Science www.osophs.dhhs.gov/ophs	(202) 690-7694
RUS	Rural Utilities Service (See USDA)	(202) 720-9540
SD	State Department www.state.gov	(202) 647-4000
TRB	Transportation Research Board http://gulliver.trb.org	(202) 334-2934
USDA	Department of Agriculture www.usda.gov	(202) 720-2791
USPS	Postal Service www.usps.com	(202) 268-2000

E. Standards and Regulations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the standards and regulations in the following list. Names, telephone numbers, and Web sites are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

ADAAG	Americans with Disabilities Act (ADA)	(800) 872-2253
	Architectural Barriers Act (ABA)	(202) 272-0080
	Accessibility Guidelines for Buildings and Facilities Available from U.S. Access Board www.access-board.gov	
CFR	Code of Federal Regulations	(866) 512-1800
	Available from Government Printing Office	(202) 512-1800
	www.gpoaccess.gov/cfr/index.html	
DOD	Department of Defense Military Specifications and Standards	(215) 697-2664
	Available from Department of Defense Single Stock Point http://dodssp.daps.dla.mil	
DSCC	Defense Supply Center Columbus (See FS)	
FED-STD	Federal Standard (See FS)	
FS	Federal Specification	(215) 697-2664
	Available from Department of Defense Single Stock Point http://dodssp.daps.dla.mil	
	Available from Defense Standardization Program www.dps.dla.mil	
	Available from General Services Administration	(202) 619-8925
	www.gsa.gov	
	Available from National Institute of Building Sciences	(202) 289-7800
	www.wbdg.org/ccb	
FTMS	Federal Test Method Standard (See FS)	
MIL	(See MILSPEC)	
MIL-STD	(See MILSPEC)	
MILSPEC	Military Specification and Standards	(215) 697-2664

	Available from Department of Defense Single Stock Point http://dodssp.daps.dla.mil	
UFAS	Uniform Federal Accessibility Standards	(800) 872-2253
	Available from Access Board	(202) 272-0080
	www.access-board.gov	

F. State Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Names, telephone numbers, and Web sites are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

CBHF	State of California, Department of Consumer Affairs Bureau of Home Furnishings and Thermal Insulation	(800) 952-5210
	www.dca.ca.gov/bhfti	(916) 574-2041
CCR	California Code of Regulations	(916) 323-6815
	www.calregs.com	
CPUC	California Public Utilities Commission	(415) 703-2782
	www.cpuc.ca.gov	
TFS	Texas Forest Service	(979) 458-6650
	Forest Resource Development http://txforestservice.tamu.edu	

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 4200

SECTION 01 5000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.

B. Related Requirements:

1. Division 01 Section "Summary" for work restrictions and limitations on utility interruptions.
2. ~~Division 32 Section "Asphalt Paving" for construction and maintenance of asphalt pavement for temporary roads and paved areas.~~
3. ~~Division 32 Section "Concrete Paving" for construction and maintenance of cement concrete pavement for temporary roads and paved areas.~~

1.3 USE CHARGES

A. General: Installation and removal of and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated. Allow other entities to use temporary services and facilities without cost, including, but not limited to, Architect, testing agencies, and authorities having jurisdiction.

B. Sewer Service: Pay sewer-service use charges for sewer usage by all entities for construction operations.

C. Water Service: Pay water-service use charges for water used by all entities for construction operations.

D. Electric Power Service: Pay electric-power-service use charges for electricity used by all entities for construction operations.

1.4 INFORMATIONAL SUBMITTALS

A. Site Plan: Show temporary facilities, utility hookups, staging areas, and parking areas for construction personnel.

B. Erosion- and Sedimentation-Control Plan: Show compliance with requirements of EPA Construction General Permit or authorities having jurisdiction, whichever is more stringent.

1.5 QUALITY ASSURANCE

A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.

B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

1.6 PROJECT CONDITIONS

A. Temporary Use of Permanent Facilities: Engage Installer of each permanent service to assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Chain-Link Fencing: Minimum 2-inch (50-mm), 0.148-inch- (3.8-mm-) thick, galvanized-steel, chain-link fabric fencing; minimum 6 feet (1.8 m) high with galvanized-steel pipe posts; minimum 2-3/8-inch- (60-mm-) OD line posts and 2-7/8-inch- (73-mm-) OD corner and pull posts, with 1-5/8-inch- (42-mm-) OD top rails.

B. Polyethylene Sheet: Reinforced, fire-resistive sheet, 10-mil (0.25-mm) minimum thickness, with flame-spread rating of 15 or less per ASTM E 84 and passing NFPA 701 Test Method 2.

2.2 TEMPORARY FACILITIES

A. Field Offices, General: Prefabricated or mobile units with serviceable finishes, temperature controls, and foundations adequate for normal loading.

B. Common-Use Field Office: Of sufficient size to accommodate needs of Owner, Architect, and construction personnel office activities and to accommodate Project meetings specified in other Division 01 Sections. Keep office clean and orderly. Furnish and equip offices as follows:

1. Furniture required for Project-site documents including file cabinets, plan tables, plan racks, and bookcases.
2. Conference room of sufficient size to accommodate meetings of 10 individuals. Provide electrical power service and 120-V ac duplex receptacles, with no fewer than one receptacle on each wall. Furnish room with conference table, chairs, and 4-foot- (1.2-m-) square tack and marker boards.
3. Drinking water and private toilet.
4. Coffee machine and supplies.
5. Heating and cooling equipment necessary to maintain a uniform indoor temperature of 68 to 72 deg F (20 to 22 deg C).
6. Lighting fixtures capable of maintaining average illumination of 20 fc (215 lx) at desk

height.

2.3 EQUIPMENT

A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.

B. HVAC Equipment: Unless Owner authorizes use of permanent HVAC system, provide vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.

1. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.
2. Heating Units: Listed and labeled for type of fuel being consumed, by a qualified testing agency acceptable to authorities having jurisdiction, and marked for intended location and application.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.

1. Locate facilities to limit site disturbance as specified in Division 01 Section "Summary."

B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION

A. General: Install temporary service or connect to existing service.

1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.

B. Sewers and Drainage: Provide temporary utilities to remove effluent lawfully.

1. Connect temporary sewers to municipal system as directed by authorities having jurisdiction.

C. Water Service: Install water service and distribution piping in sizes and pressures adequate for construction.

D. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.

E. Heating and Cooling: Provide temporary heating and cooling required by construction activities for curing or drying of completed installations or for protecting installed construction from

adverse effects of low temperatures or high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed.

F. Electric Power Service: Provide electric power service and distribution system of sufficient size, capacity, and power characteristics required for construction operations.

1. Install electric power service underground unless otherwise indicated.

G. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.

H. Telephone Service: Provide temporary telephone service in common-use facilities for use by all construction personnel. Install one telephone line(s) for each field office.

1. Provide additional telephone lines for the following:

a. Provide a dedicated telephone line for each facsimile machine in each field office.

2. Provide superintendent with cellular telephone or portable two-way radio for use when away from field office.

3.3 SUPPORT FACILITIES INSTALLATION

A. General: Comply with the following:

1. Provide construction for temporary offices, shops, and sheds located within construction area or within 30 feet (9 m) of building lines that is noncombustible according to ASTM E 136. Comply with NFPA 241.
2. Maintain support facilities until Architect schedules Substantial Completion inspection. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.

B. Temporary Roads and Paved Areas: Construct and maintain temporary roads and paved areas adequate for construction operations. Locate temporary roads and paved areas within construction limits indicated.

C. Temporary Use of Permanent Roads and Paved Areas: Locate temporary roads and paved areas in same location as permanent roads and paved areas. Construct and maintain temporary roads and paved areas adequate for construction operations. Extend temporary roads and paved areas, within construction limits indicated, as necessary for construction operations.

1. Coordinate elevations of temporary roads and paved areas with permanent roads and paved areas.
2. Recondition base after temporary use, including removing contaminated material, regrading, proofrolling, compacting, and testing.
3. Delay installation of final course of permanent hot-mix asphalt pavement until immediately before Substantial Completion. Repair hot-mix asphalt base-course pavement before installation of final course according to Division 32 Section "Asphalt Paving."

D. Traffic Controls: Comply with requirements of authorities having jurisdiction.

1. Protect existing site improvements to remain including curbs, pavement, and utilities.
2. Maintain access for fire-fighting equipment and access to fire hydrants.

E. Parking: Provide temporary parking areas for construction personnel.

F. Project Signs: Provide Project signs as indicated. Unauthorized signs are not permitted.

1. Identification Signs: Provide Project identification signs as indicated on Drawings.
2. Temporary Signs: Provide other signs as indicated and as required to inform public and individuals seeking entrance to Project.

    a. Provide temporary, directional signs for construction personnel and visitors.

3. Maintain and touchup signs so they are legible at all times.

G. Waste Disposal Facilities: Comply with requirements specified in Division 01 Section "Construction Waste Management and Disposal."

H. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with progress cleaning requirements in Division 01 Section "Execution."

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Temporary Erosion and Sedimentation Control: Provide measures to prevent soil erosion and discharge of soil-bearing water runoff and airborne dust to undisturbed areas and to adjacent properties and walkways, according to erosion- and sedimentation-control Drawings

1. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross tree- or plant- protection zones.
2. Inspect, repair, and maintain erosion- and sedimentation-control measures during construction until permanent vegetation has been established.
3. Clean, repair, and restore adjoining properties and roads affected by erosion and sedimentation from Project site during the course of Project.
4. Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

B. Stormwater Control: Comply with requirements of authorities having jurisdiction. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater from heavy rains.

C. Pest Control: Engage pest-control service to recommend practices to minimize attraction and harboring of rodents, roaches, and other pests and to perform extermination and control procedures at regular intervals so Project will be free of pests and their residues at Substantial Completion. Perform control operations lawfully, using environmentally safe materials.

D. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.

E. Temporary Egress: Maintain temporary egress from existing occupied facilities as indicated and as required by authorities having jurisdiction.

F. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241; manage fire-prevention program.

1. Prohibit smoking in construction areas.
2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
3. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.
4. Provide temporary standpipes and hoses for fire protection. Hang hoses with a warning sign stating that hoses are for fire-protection purposes only and are not to be removed. Match hose size with outlet size and equip with suitable nozzles.

3.5 OPERATION, TERMINATION, AND REMOVAL

A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.

B. Maintenance: Maintain facilities in good operating condition until removal.

1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.

C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.

D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.
2. Remove temporary roads and paved areas not intended for or acceptable for integration into permanent construction. Where area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant materials or lawns. Repair or replace street paving, curbs, and sidewalks at temporary entrances, as required by authorities having jurisdiction.
3. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Division 01 Section "Closeout Procedures."

END OF SECTION 01 5000

PROJECT SIGN DETAIL

1. SIGN SHALL BE CONSTRUCTED OF 3/4" EXTERIOR GRADE PLYWOOD PAINTED ON ALL SIDES AND EDGES WITH 2 COATS EXTERIOR SEMIGLOSS WHITE ENAMEL AND LETTERED WITH EXTERIOR BLACK ENAMEL, "ARIAL BOLD" FONT.
2. SIGN TO BE PLACED AT LOCATION(S) DIRECTED BY THE CITY OF MOBILE ARCHITECTURAL ENGINEERING DEPARTMENT.
3. SIGN SHALL BE FRESHLY PAINTED AND MAINTAINED IN GOOD CONDITION UNTIL COMPLETION OF PROJECT, AND THEN REMOVED FROM THE SITE.
4. PROJECT COST SHALL BE NEATLY PAINTED ON ORIGINAL SIGN, NOT ON A BOARD NAILED TO THE SIGN.
5. 4 x 4 PRESSURE-TREATED WOOD POSTS TO BE PAINTED WITH 2 COATS EXTERIOR SEMIGLOSS WHITE ENAMEL.
6. VERIFY VERBIAGE OF SIGN WITH OWNER BEFORE INSTALLING.

SHEET 1 of 1

SECTION 01 6000 - MATERIALS AND EQUIPMENT

PART 1 - GENERAL

1.01 General:

A. Material shall be new and without any indication of damage or overage. If usually packaged bring to job in original unbroken labeled containers. Materials not specified but required, shall be of a grade equal or superior to related parts of work.

B. Products include materials, equipment and systems.

C. Comply with Contract Documents and referenced standards as minimum requirements.

D. Do not use or remove from site any materials and equipment removed from the existing structure, except as specifically required or allowed by Contract Documents.

E. All construction procedures and materials used in the work for this project shall comply with the following:

1. Contract Documents

2. Applicable Manufacturer's Specifications

3. Accepted standards/practices

4. Applicable building codes, both national and local

F. Color Selections: The Designer'/Owner's color schedule will be prepared for color only; it will not justify deviations from Contract requirements (such as changing of finish material, type of paint, etc.) which must be made by Change Order. Where color numbers and names conflict, secure instructions before proceeding.

G. Foreign Materials: In accordance with State Law, provide only materials manufactured, mined or processed in the United States or its territories, provided same are available at reasonable prices.

1.02 WORKMANSHIP:

A. Work shall be performed by persons qualified to produce workmanship and quality specified.

B. The Construction Manager's designated Superintendent shall provide full-time on-site supervision.

1.03 MANUFACTURER'S INSTRUCTIONS:

A. Work shall be performed in accordance with the Material Manufacturer's specifications as modified by the Contract Documents.

B. Conflicts between the Contract Documents and the Material Manufacturer's specifications shall be brought to the attention of the Project Manager prior to beginning construction. Work in this area shall not proceed until conflicts are satisfactorily resolved by Project Manager.

C. Provide Material Safety Data Sheets (MSDS) for all materials brought on the site.

1.04 TRANSPORTATION AND HANDLING:

A. Transport products by methods to avoid product damage; deliver all materials with Manufacturer's labels intact and legible.

B. Provide equipment and personnel to handle products by methods to prevent damage.

1.05 STORAGE AND PROTECTION:

A. The following are considered minimum requirements. Additional storage and protection requirements are specified in individual sections of the specifications.

B. Store all materials so as to maintain clean, dry, weather tight conditions and to protect against loss, damage, and wetting. Materials indicating moisture contents above the specified level shall be marked, rejected for installation, and removed from the site.

C. Materials temporarily stored on the scaffold or floor shall be located in approved areas and shall be distributed in such a manner as to stay within the allowable load limits.

D. Materials subject to moisture intrusion and damage shall be stored on clean, dry, and raised platforms so as to prevent wetting or moisture absorption and yet provide sufficient ventilation to prevent condensation. These materials shall be covered so as to be completely weather tight. Factory-applied wrapping shall be unacceptable as the sole means of protection.

E. Any materials which when subject to moisture intrusion may have a detrimental effect on the installation or performance of other components of the roofing system, shall be stored as indicated in Items 1.05, B. and D.

1.06 PRODUCT OPTIONS:

A. The Contractor shall submit list of materials proposed in accordance with Section 01 3300

B. Product Selection: Provide products according to the following.

1. Products specified only by referenced standards: Any product meeting that standard.

2. Products specified by naming several manufacturers: Products of any named manufacturer meeting Specifications unless specific approval of other brand is obtained in writing. Comparison of substitute brands will be with the first name of those listed.

    a. By requesting approval of or by making a substitution, the Contractor shall certify that the product substituted is in all respects equal to, and will function equally well in the project, as the product specified. The Architect/Engineer, at his discretion may require the certification in writing.

3. Whenever any material or piece of equipment is identified on the plans or in the Specifications by reference to a single manufacturer's name, model numbers, etc., without the phrase "or approved equal", this material or equipment shall be supplied as specified without consideration to any other manufacturer. Any deviation from this requirement must be approved in writing by the Designer prior to the receipt of bids.

4. When the Specifications and/or Drawings indicate two or more manufacturer's names or brands for materials or equipment to be used, it shall be assumed that the phrase "or approved equal" is inserted following the naming of manufacturers, whether such phrase occurs in the Specifications or not. However, if the Contractor desires to use a substitute, it must secure written approval by the Designer. If a request to substitute an "approved equal" is made by the Contractor, and not approved by the Designer, then it will be expressly understood that all such material and equipment so named or described by any one of the manufacturers listed in the Specifications and/or Drawings will be furnished in full accordance with the Contract Documents.

5. Brand Names: Mentioned herein to establish a standard of design and quality. Except when indicated in subsequent sections in regard to each particular item. Qualified pre-bid approval may be given to various vendors at their request on products for which pre-bid approval is not required; such approvals will be communicated only to the vendor.

    Where three or more manufacturers are listed, the product must be furnished by one of the manufacturers so listed unless specific approval of other brand is obtained in writing. Comparison of substitute brands will be with the first name of those listed.

1.07 SUBSTITUTIONS:

Prior to commencing work, the Project Manager will consider requests from the Contractor for substitutions. Substitutions will then be considered according to the procedures as presented in Section 01 6300 of this Project Manual.

1.08 INSTALLATION

Install, apply, connect, clean and operate all materials and equipment per manufacturer's directions and recommendations. In the event of conflict between specifications and manufacturer's directions, obtain instructions from Engineer.

1.09 REFERENCE TO APPLICABLE STANDARDS:

A. Whenever reference is made to codes, standard specifications, or other data published by regulating agencies or accepted organizations, it shall be understood that such reference is made to the latest edition (including addenda) published prior to the date of the Contract Documents, except as noted specifically otherwise by date in the Contact Documents. By reference, this data becomes a legal part of this specification and shall provide the standard for the work unless otherwise noted in this project manual.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF SECTION 01 6000

SECTION 01 6005 - PRODUCT REQUIREMENTS

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.

B. Related Requirements:
1. Division 01 Section "Alternates" for products selected under an alternate.
2. Division 01 Section "Substitution Procedures" for requests for substitutions.
3. Division 01 Section "References" for applicable industry standards for products specified.

1.3 DEFINITIONS

A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.

1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature, that is current as of date of the Contract Documents.
2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.
3. Comparable Product: Product that is demonstrated and approved through submittal process to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.

B. Basis-of-Design Product Specification: A specification in which a specific manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of additional manufacturers named in the specification.

1.4 ACTION SUBMITTALS

A. Comparable Product Requests: Submit request for consideration of each comparable product. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Include data to indicate compliance with the requirements specified in "Comparable Products" Article.
2. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within one week of receipt of a comparable product request. Architect will notify Contractor of approval or rejection of proposed comparable product request within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.

    a. Form of Approval: As specified in Division 01 Section "Submittal Procedures."
    b. Use product specified if Architect does not issue a decision on use of a comparable product request within time allocated.

B. Basis-of-Design Product Specification Submittal: Comply with requirements in Division 01 Section "Submittal Procedures." Show compliance with requirements.

1.5 QUALITY ASSURANCE

A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.

1. Each contractor is responsible for providing products and construction methods compatible with products and construction methods of other contractors.
2. If a dispute arises between contractors over concurrently selectable but incompatible products, Architect will determine which products shall be used.

1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.

B. Delivery and Handling:

1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.

4. Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.

C. Storage:

1. Store products to allow for inspection and measurement of quantity or counting of units.
2. Store materials in a manner that will not endanger Project structure.
3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
4. Protect foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
5. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
6. Protect stored products from damage and liquids from freezing.
7. Provide a secure location and enclosure at Project site for storage of materials and equipment by Owner's construction forces. Coordinate location with Owner.

1.7 PRODUCT WARRANTIES

A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.

1. Manufacturer's Warranty: Written warranty furnished by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
2. Special Warranty: Written warranty required by the Contract Documents to provide specific rights for Owner.

B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution.

1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
2. Specified Form: When specified forms are included with the Specifications, prepare a written document using indicated form properly executed.
3. See Divisions 02 through 33 Sections for specific content requirements and particular requirements for submitting special warranties.

C. Submittal Time: Comply with requirements in Division 01 Section "Closeout Procedures."

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.

1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
4. Where products are accompanied by the term "as selected," Architect will make selection.
5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.
6. Or Equal: For products specified by name and accompanied by the term "or equal," or "or approved equal," or "or approved," comply with requirements in "Comparable Products" Article to obtain approval for use of an unnamed product.

B. Product Selection Procedures:

1. Product: Where Specifications name a single manufacturer and product, provide the named product that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
3. Products:

    a. Restricted List: Where Specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered unless otherwise indicated.
    b. Nonrestricted List: Where Specifications include a list of names of both available manufacturers and products, provide one of the products listed, or an unnamed product, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product.

4. Manufacturers:

    a. Restricted List: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered unless otherwise indicated.
    b. Nonrestricted List: Where Specifications include a list of available manufacturers, provide a product by one of the manufacturers listed, or a product by an unnamed manufacturer, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed manufacturer's product.

5. Basis-of-Design Product: Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of manufacturers, provide the specified or indicated product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics

that are based on the product named. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product by one of the other named manufacturers.

C. Visual Matching Specification: Where Specifications require "match Architect's sample", provide a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.

1. If no product available within specified category matches and complies with other specified requirements, comply with requirements in Division 01 Section "Substitution Procedures" for proposal of product.

D. Visual Selection Specification: Where Specifications include the phrase "as selected by Architect from manufacturer's full range" or similar phrase, select a product that complies with requirements. Architect will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

2.2 COMPARABLE PRODUCTS

A. Conditions for Consideration: Architect will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Architect may return requests without action, except to record noncompliance with these requirements:

1. Evidence that the proposed product does not require revisions to the Contract Documents, that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
3. Evidence that proposed product provides specified warranty.
4. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
5. Samples, if requested.

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 6005

SECTION 01 6300 - SUBSTITUTION PROCEDURES

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for substitutions.

B. Related Sections:
   1. Divisions 2 through 26 Sections for specific requirements and limitations for substitutions and pre-bid approvals.

1.3 DEFINITIONS

A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.

   1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.
   2. Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required in order to meet other Project requirements but may offer advantage to Contractor or Owner.

1.4 SUBMITTALS

A. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced.

   1. Documentation: Show compliance with requirements for substitutions and the following, as applicable:

      a. Statement indicating why specified product or fabrication or installation cannot be provided, if applicable.
      b. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors that will be necessary to accommodate proposed substitution.
      c. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
      d. 6”x12” Samples of each finish material in proposed pattern and color.
      e. Certificates and qualification data.
      f. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.

g. Cost information, including a proposal of change, if any, in the Contract Sum (not applicable for pre-bid Submittals).
h. Impact of substitution on construction schedule.
i. Contractor's certification that proposed substitution complies with requirements in the Contract Documents except as indicated in substitution request, is compatible with related materials, and is appropriate for applications indicated.
j. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.

2. Project Manager's Action: If necessary, Project Manager will request additional information or documentation for evaluation within seven days of receipt of a request for substitution. Project Manager will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.

a. Forms of Acceptance: Change Order, Construction Change Directive, or Project Manager Supplemental Instructions for minor changes in the Work.
b. Use product specified if Project Manager does not issue a decision on use of a proposed substitution within time allocated.

1.5 QUALITY ASSURANCE

A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage qualified testing agency to perform compatibility tests recommended by manufacturers.

1.6 PROCEDURES

A. Coordination: Modify or adjust affected work as necessary to integrate work of the approved substitutions.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 6300

SECTION 01 7300 - EXECUTION REQUIREMENTS

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:

1. Environmental concerns.
2. Installation of the Work.
3. Cutting and patching.
4. Progress cleaning.
5. Starting and adjusting.
6. Protection of installed construction.
7. Correction of the Work.

B. Related Sections:
1. Division 1 Sections “Summary of the Work” and “Project Record Documents” for submitting closeout documents and final cleaning.

1.3 DEFINITIONS

A. Cutting: Removal of in-place construction necessary to permit installation or performance of other work.

B. Patching: Fitting and repair work required to restore construction to original conditions after installation of other work.

1.4 INFORMATIONAL SUBMITTALS

A. Cutting and Patching Plan: Submit plan describing procedures at least 10 days prior to the time cutting and patching will be performed. Include the following information:

1. Extent: Describe reason for and extent of each occurrence of cutting and patching.
2. Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building appearance and other significant visual elements.
3. Products: List products to be used for patching and firms or entities that will perform patching work.
4. Dates: Indicate when cutting and patching will be performed.
5. Utilities and Mechanical and Electrical Systems: List services and systems that cutting and patching procedures will disturb or affect. List services and systems that will be

relocated and those that will be temporarily out of service. Indicate how long services and systems will be disrupted.

1.5 QUALITY ASSURANCE

A. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Comply with requirements specified in other Sections.

B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.

1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to the Architect for the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning work, investigate and verify the existence and location of underground utilities, mechanical and electrical systems, and other construction affecting the Work.

1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; underground electrical services, and other utilities.
2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.

B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.

1. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:

a. Description of the Work.
b. List of detrimental conditions, including substrates.
c. List of unacceptable installation tolerances.
d. Recommended corrections.

2. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
3. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
4. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
5. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

B. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.

C. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of the Contractor, submit a request for information to Architect according to requirements in Division 1 Section "Project Management and Coordination."

D. Surface and Substrate Preparation: Comply with manufacturer's recommendations for preparation of substrates to receive subsequent work.

3.3 INSTALLATION

A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.

1. Make vertical work plumb and make horizontal work level.
2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
3. Conceal pipes, ducts, and wiring in finished areas, unless otherwise indicated.
4. Maintain minimum headroom clearance of 96 inches, but in no case shall the new piping be lower than the existing piping.

B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.

C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.

D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.

E. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.

F. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.

G. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.

1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect / Engineer.
2. Allow for building movement, including thermal expansion and contraction.
3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

H. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.

I. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous, and meet environmental requirements.

3.4 CUTTING AND PATCHING

A. Cutting and Patching, General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.

1. Cut in-place construction to provide for installation of other components or performance of other construction and subsequently patch as required to restore surfaces to their original condition.

B. Temporary Support: Provide temporary support of work to be cut.

C. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

D. Adjacent Occupied Areas: Where interference with use of adjoining areas or interruption of free passage to adjoining areas is unavoidable, coordinate cutting and patching in accordance with requirements of Division 1 Section "Summary of Work"

E. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to prevent interruption to occupied areas.

F. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or

adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.

1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
4. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
5. Proceed with patching after construction operations requiring cutting are complete.

G. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.

1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing.

    a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
    b. Restore damaged pipe covering to its original condition.

3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.

    a. Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
4. Exterior Enclosure: Patch components in a manner that restores enclosure to a weathertight condition.

H. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

3.5 PROGRESS CLEANING

A. General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.

1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F (27 deg C).
3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.

    a. Utilize containers intended for holding waste materials of type to be stored.

4. Coordinate progress cleaning for joint-use areas where more than one installer has worked.

B. Site: Maintain Project site free of waste materials and debris.

C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.

1. Remove liquid spills promptly.

2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.

D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

E. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

F. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials or painting products down sewers or into waterways.

G. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

H. Clean completed construction as frequently as necessary through the remainder of the construction period.

3.6 STARTING AND ADJUSTING

A. Coordinate startup and adjusting of equipment and operating components with requirements in other Division 2 -16 Sections."

B. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.

C. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.

D. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

E. Manufacturer's Field Service: Comply with qualification requirements in other Division 2-16 Sections.

3.7 PROTECTION OF INSTALLED CONSTRUCTION

A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.

B. Comply with manufacturer's written instructions for temperature and relative humidity.

3.8 CORRECTION OF THE WORK

A. Repair or remove and replace defective construction. Restore damaged substrates and finishes.

1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.

B. Restore permanent facilities used during construction to their specified condition.

C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.

D. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.

E. Remove and replace chipped, scratched, and broken glass, lenses or reflective surfaces.

3.9 ENVIRONMENTAL CONCERNS

1. Provide protection and conduct construction in ways that comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.

3.10 STORMWATER CONTROL AND DISCHARGE

1. Comply with City of Mobile and Alabama Department of Environmental Management requirements. Pay particular attention to Water Regulations and Allowable Discharges.

2. See City of Mobile Code, Chapter 17, Storm Water Management and Flood Control.

3. Obtain any necessary permits that may be required due to discharges.

END OF SECTION 01 7300

SECTION 01 7400 - CLEANING AND WASTE MANAGEMENT

PART 1 - GENERAL

1.01 REMOVAL OF DEBRIS:

A. All debris and waste materials shall become the property of the Contractor, and the Contractor shall be responsible for removal of the debris from the project site on a daily basis.

B. Demolition debris shall be removed in covered trucks or other method that prevents debris, litter, dust, etc. from falling onto streets, sidewalks or soil. Streets, sidewalks and other public and private spaces shall be kept clean and free from demolition debris at all times.

C. The Contractor shall be responsible for the cleanup of streets, driveways, sidewalks, and landscaping. Failure to clean promptly (within one day's notice) will result in the Owner having areas cleaned and deducting costs for same from the Contractor's contract.

D. No storage of debris or trash will be allowed on the exterior of the building unless in an approved container.

E. The Contractor shall be responsible for cleanup of existing windows, roofs, etc. (if applicable).

F. All debris shall be documented (dump tickets acceptable). During project close-out, a debris report will be required. Debris Report must include weight of debris.

1.02 DUST AND DEBRIS:

A. The Contractor shall not allow debris and dust to accumulate for more than one day before removing such from adjacent public streets and driveways as a result of the work of this project. At no time shall any accumulation be allowed, which will create a hazard to safety or which will create bad public relations. No construction debris is allowed to run into existing storm water drains.

B. The measures to be used to prevent littering the pavement shall include (but does not constitute the only measure to be used, if necessary) the following:

1. Maintain dust control.

2. Wash and/or sweep paved areas.

3. Pick up droppings as they occur.

4. Clean existing windows, roofs and landscaped areas (if applicable).

C. Preventative measures shall be taken to prevent debris from falling onto vehicles from work performed at upper elevations (if applicable).

D. In facilities under use during the project, Contractor shall take necessary measures to limit dust intrusion into areas of the facility in use. Owner shall have sole discretion for judging if dust in areas under use by occupants is too severe.

1.03 CLEANING UP: Before final inspection and acceptance of the project, clean work under the contract, including adjacent pavements and parking deck concrete surfaces.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF SECTION 01 7400

SECTION 01 77 00 - CLOSEOUT PROCEDURES

PART 1 - GENERAL:

1.01 GENERAL REQUIREMENTS:

A. When project construction reaches 75% complete, a 75% Closeout Meeting with the City of Mobile (CoM) Project Manager and the Contractor is required to review in detail all requirements for completing and closing out the project. When project construction reaches 95% complete, a Closeout Meeting with CoM Contract Administrator, the Contractor, Project Architect/Engineer, and others as appropriate is required to further review requirements for project close out.

B. Except as noted, delivery of items listed hereunder are prerequisites for release of final retainage as indicated on the contractor's application for payment.

C. All required warranties and guarantees will commence upon date of Certificate of Substantial Completion.

D. Closeout Submittal Requirements:

1. (1) Copy of Operation and Maintenance manuals (properly tabbed and indexed). See General Conditions of the Contract and specification sections regarding Shop Drawings & Submittals. Operation and Maintenance manuals are to be submitted during construction but no later than 30 days prior to contract completion date.

2. (1) Closeout Binder labeled "Closeouts" including Mobile project name and job number with all applicable items in order as listed under "Project Closeout Items"

3. Electronic closeout submittals in PDF file format of the following:

    a) (1) copy of the Operation and Maintenance manuals

    b) (1) copy of all applicable "Project Closeout Items"

E. Projects must be closed within 60 (sixty) days of Certificate of Substantial Completion.
(This means all close out documents have been reviewed and accepted by The Awarding Authority.)

1.02 PROJECT CLOSEOUT ITEMS:

A. Furnish the following items in order to successfully close out a project:

1. As-Built Drawings and specification mark-ups must be reviewed by project team for completeness.

2. Operation and Maintenance Manuals

    a) GC to upload into active projects Closeout Documents folder on City of Mobile's e-Builder site *(PDF Format)*

    b) GC to submit one (1) hard copy with closeout binder

    c) A/E to provide confirmation on letterhead that all O&M's have been uploaded to

Mobile's e-builder site

3. Completed Training sessions for Owner's personnel as required per project specifications (*Attendees sign-in sheets required*)
4. Certificate of Occupancy from City *(original required)*
5. Approved HVAC Test and Balance Report **and** Documented Functional Performance Testing by the Commissioning Agent *(if applicable)*
6. Control Drawings are to be complete and available for review *(if applicable)*
7. Fire Alarm Certification *(copy is acceptable)*
8. Carpet Certifications (ASTM Standards for Flame Spread and Smoke Development) – See Specs if applicable
9. State Elevator Inspection Report *(if applicable)*
10. Boiler Permit/Inspection Report *(if applicable)*
11. City of Mobile Project Manager to complete the following:

    a) Confirm Design Team submitted AutoCAD 3D (.dwg) files of the site plan, site utility plans, and site power plans to the city's Architectural Engineering Dept. Plans to be referenced to the Alabama West Zone Grid NAD 1983.

12. Construction Record Documents:

    a) "As-Built Drawings" – submitted electronically on a USB Flash Drive (PDF and AutoCAD .dwg Format)

       (1) All field red-lines incorporated, external references bound and "As-Built" indicated in title block.

       (2) Submit electronic copy to A/E for approval

    b) Control Drawings (Bond Copy) – submitted electronically on a USB Flash Drive (PDF Format)

    c) Final Conformance Specifications – submitted electronically on USB Flash Drive *(PDF and Microsoft Word Format)*

    d) PM to confirm all of the above as received prior to closeout with Contract Administrator.

13. Proof of Advertisement of Completion - Certified by a locally published newspaper of general circulation, in accordance with Title 39, Section 39-1-1 of the Code of Alabama
14. Affidavit of Release of Liens from GC only, on AIA Document G706A form. Release of Liens - from GC and all subs
15. GC and Subcontractor Warranties - Standard (1) year & any extended that may be required by specific specification sections.
16. Extended Manufacturer's Warranties
17. Roof Warranties - Standard Five-Year (ABC Form C-9) plus additional warranties required in the specification sections.

18. Delivery of Maintenance Stock Items as Specified - See Specs for specific requirements - Furnish signed receipts
19. Receipt for return of all keys - Transmit to City of Mobile Project Manager
20. Elevator Requirements (if applicable, in addition to Item 8 above)
    a) Executed elevator maintenance agreement *(copy, if applicable)*
    b) Reminder: PM to confirm all elevator submittals are complete
21. Termite Contract (copy is acceptable)
22. Fully Executed CERTIFICATE OF SUBSTANTIAL COMPLETION, AIA Document G704
23. GC to provide copy of executed Final Change Order Form as part of close-out binder.
    a) Cover sheet only with all signatures, must include all reconciliations *(previous errors, allowances and /or unit prices).*
24. CONSENT OF SURETY FOR FINAL PAYMENT (*date of Power of Attorney must be same or later than date indicated on Consent of Surety*)
25. Certification that final punch lists items have been completed
26. Utilities: Confirmation that all have been transferred into "City of Mobile" name
27. Construction Debris Report: Submit estimated tons of construction debris hauled off from project site on GC letterhead.
28. Equipment List for Maintenance and Replacement Parts - Provide a list of all equipment *(i.e. water heaters, air handlers, etc.)* with model numbers, serial numbers and warranty periods. Include filter and belt list for each air handler unit
29. Minority and Woman-Owned Business (MWB) Subcontracts Form
30. Subcontracting and Major Supplier Plan Form

B. Items A.1 through A.10 above must be complete and reviewed by A/E prior to scheduling a final inspection with *City of Mobile* and are a condition precedent to issuing Certificate of Substantial Completion.

C. When applicable all Davis Bacon and DBE (Disadvantaged Business Enterprise) requirements must be reported and final submission on file with the *City of Mobile* before closeouts are considered complete.

D. GC is required to determine requirement for Submission of other documentation may be required in the Specifications and Construction Drawings.

E. All closeout Documents are to be submitted within 45 days of substantial completion. If not submitted within 45 days the Awarding Authority, with no further notice required, may elect, at its sole discretion, acquire all outstanding required documents, and the actual cost thereof will be deducted from the contract.

1.03 INSPECTIONS:

A. Final Inspection: For a Certificate of Substantial Completion (COSC) to be issued the Final Inspection must be conducted by the Architect, Engineers & *City of Mobile* Project Manager,

and appropriate Public Officials upon notification by Contractor and concurrence by Architect, Engineer & City of Mobile that project is complete. Punch lists prepared at inspections shall be corrected within thirty days of the date of the COSC.

B. Year-End Inspection: To be conducted jointly by Architect, Engineer, City of Mobile Project Manager, and appropriate Public Officials approximately 1 year after completion and upon notice by Architect, Engineer, City of Mobile Project Manager, and Public Officials. Any and all defects will be expected to be remedied as soon as possible.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF SECTION 01 7700

SECTION 01 7839 - PROJECT RECORD DOCUMENTS

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative and procedural requirements for project record documents, including the following:

1. Record Drawings.
2. Record Specifications.
3. Record Product Data.
4. Miscellaneous record submittals.

B. Related Requirements:
1. Division 01 Section "Execution" for final property survey.
2. Division 01 Section "Closeout Procedures" for general closeout procedures.
3. Division 01 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.
4. Divisions 02 through 33 Sections for specific requirements for project record documents of the Work in those Sections.

1.3 CLOSEOUT SUBMITTALS

A. Record Drawings: Comply with the following:

1. Number of Copies: Submit one set(s) of marked-up record prints.
2. Number of Copies: Submit copies of record Drawings as follows:

a. Initial Submittal:
1) Submit PDF electronic files of scanned record prints and one of file prints.
2) Submit record digital data files and one set(s) of plots.
3) Architect will indicate whether general scope of changes, additional information recorded, and quality of drafting are acceptable.

b. Final Submittal:
1) Submit PDF electronic files of scanned record prints and three set(s) of prints.
2) Print each drawing, whether or not changes and additional information were recorded.

B. Record Specifications: Submit one paper copy of Project's Specifications, including addenda and contract modifications.

C. Record Product Data: Submit one paper copy of each submittal.

1. Where record Product Data are required as part of operation and maintenance manuals, submit duplicate marked-up Product Data as a component of manual.

D. Miscellaneous Record Submittals: See other Specification Sections for miscellaneous record-keeping requirements and submittals in connection with various construction activities. Submit one paper copy of each submittal.

PART 2 - PRODUCTS

2.1 RECORD DRAWINGS

A. Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued.

1. Preparation: Mark record prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.

a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
b. Accurately record information in an acceptable drawing technique.
c. Record data as soon as possible after obtaining it.
d. Record and check the markup before enclosing concealed installations.
e. Cross-reference record prints to corresponding archive photographic documentation.

2. Content: Types of items requiring marking include, but are not limited to, the following:

a. Dimensional changes to Drawings.
b. Revisions to details shown on Drawings.
c. Depths of foundations below first floor.
d. Locations and depths of underground utilities.
e. Revisions to routing of piping and conduits.
f. Revisions to electrical circuitry.
g. Actual equipment locations.
h. Duct size and routing.
i. Locations of concealed internal utilities.
j. Changes made by Change Order or Construction Change Directive.
k. Changes made following Architect's written orders.
l. Details not on the original Contract Drawings.
m. Field records for variable and concealed conditions.
n. Record information on the Work that is shown only schematically.

3. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
4. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
5. Mark important additional information that was either shown schematically or omitted from original Drawings.
6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.

B. Format: Identify and date each record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.

1. Record Prints: Organize record prints and newly prepared record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
2. Format: Annotated PDF electronic file.
3. Record Digital Data Files: Organize digital data information into separate electronic files that correspond to each sheet of the Contract Drawings. Name each file with the sheet identification. Include identification in each digital data file.
4. Identification: As follows:

    a. Project name.
    b. Date.
    c. Designation "PROJECT RECORD DRAWINGS."
    d. Name of Architect.
    e. Name of Contractor.

2.2 RECORD SPECIFICATIONS

A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
4. For each principal product, indicate whether record Product Data has been submitted in operation and maintenance manuals instead of submitted as record Product Data.
5. Note related Change Orders and record Drawings where applicable.

B. Format: Submit record Specifications as paper copy.

2.3 RECORD PRODUCT DATA

A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
3. Note related Change Orders and record Drawings where applicable.

B. Format: Submit record Product Data as paper copy.

1. Include record Product Data directory organized by Specification Section number and title, electronically linked to each item of record Product Data.

2.4 MISCELLANEOUS RECORD SUBMITTALS

A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

B. Format: Submit miscellaneous record submittals as paper copy.

1. Include miscellaneous record submittals directory organized by Specification Section number and title, electronically linked to each item of miscellaneous record submittals.

PART 3 - EXECUTION

3.1 RECORDING AND MAINTENANCE

A. Recording: Maintain one copy of each submittal during the construction period for project record document purposes. Post changes and revisions to project record documents as they occur; do not wait until end of Project.

B. Maintenance of Record Documents and Samples: Store record documents and Samples in the field office apart from the Contract Documents used for construction. Do not use project record documents for construction purposes. Maintain record documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to project record documents for Architect's reference during normal working hours.

END OF SECTION 01 7839

SECTION 01 7900 - DEMONSTRATION AND TRAINING

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative and procedural requirements for instructing Owner's personnel, including the following:

1. Demonstration of operation of systems, subsystems, and equipment.
2. Training in operation and maintenance of systems, subsystems, and equipment.
3. Demonstration and training video recordings.

B. Related Requirements:

1. Divisions 02 through 33 Sections for specific requirements for demonstration and training for products in those Sections.

C. Allowances: Furnish demonstration and training instruction time under the Demonstration and Training Allowance as specified in Division 01 Section "Allowances."

D. Unit Price for Instruction Time: Length of instruction time will be measured by actual time spent performing demonstration and training in required location. No payment will be made for time spent assembling educational materials, setting up, or cleaning up. See requirements in Division 01 Section "Unit Prices."

1.3 CLOSEOUT SUBMITTALS

1.4 QUALITY ASSURANCE

A. Instructor Qualifications: A factory-authorized service representative, complying with requirements in Division 01 Section "Quality Requirements," experienced in operation and maintenance procedures and training.

1.5 COORDINATION

A. Coordinate instruction schedule with Owner's operations. Adjust schedule as required to minimize disrupting Owner's operations and to ensure availability of Owner's personnel.

B. Coordinate instructors, including providing notification of dates, times, length of instruction time, and course content.

C. Coordinate content of training modules with content of approved emergency, operation, and maintenance manuals. Do not submit instruction program until operation and maintenance data has been reviewed and approved by Architect.

PART 2 - PRODUCTS

2.1 INSTRUCTION PROGRAM

A. Program Structure: Develop an instruction program that includes individual training modules for each system and for equipment not part of a system, as required by individual Specification Sections.

PART 3 - EXECUTION

3.1 PREPARATION

A. Assemble educational materials necessary for instruction, including documentation and training module. Assemble training modules into a training manual organized in coordination with requirements in Division 01 Section "Operations and Maintenance Data."

B. Set up instructional equipment at instruction location.

3.2 INSTRUCTION

A. Scheduling: Provide instruction at mutually agreed on times. For equipment that requires seasonal operation, provide similar instruction at start of each season.

1. Schedule training with Owner, through Architect, with at least seven days' advance notice.

B. Training Location and Reference Material: Conduct training on-site in the completed and fully operational facility using the actual equipment in-place. Conduct training using final operation and maintenance data submittals.

END OF SECTION 01 7900

SECTION 220000 – PLUMBING GENERAL

PART 1 - GENERAL

1.1 The work covered by this division consists of providing all labor, equipment and materials and performing all operations necessary for the installation of the plumbing work as herein called for and shown on the drawings. The work shall include but shall not be limited to the following:

Provide all plumbing and associated fittings, valves, and accessories for the project. Fully coordinate all plumbing requirements with work by other divisions under this construction contract. All systems shall be complete and fully functional.

1.2 Related Documents:

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

B. Provisions of this section apply to work of all Division 22 sections.

C. Review all other contract documents to be aware of conditions affecting work herein.

1.3 Definitions:

A. Provide: Furnish and install, complete and ready for intended use.

B. Furnish: Supply and deliver to the project site, ready for subsequent requirements.

C. Install: Operations at project site, including unloading, unpacking, assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar requirements.

1.4 Permits and Fees: Contractor shall obtain all necessary permits, meters, and inspections required for Division 22 work and pay all fees and charges incidental thereto.

1.5 Verification of Owner's Survey Data: Prior to commencing any work, the Contractor shall verify the accuracy of all survey data as indicated in these plans and specifications and/or as provided by the Owner. Should the Contractor discover any inaccuracies, errors, or omissions in the data, such items shall immediately be notified to the Architect/Engineer so that proper adjustments can be anticipated and ordered. Commencement by the Contractor of work shall be held as an acceptance of the data after which time the Contractor has no claim against the Owner resulting from alleged errors, omissions or inaccuracies of the said data.

1.6 Delivery and Storage of Materials: Materials delivered to site shall be inspected for damage, unloaded, and stored with a minimum of handling. All material shall be stored to provide protection from the weather and accidental damage.

1.7 Extent of work is indicated by the drawings, schedules, and the requirements of the specifications. Singular references shall not be construed as requiring only one device if multiple devices are shown on the drawings or are required for proper system operation.

1.8 Field Measurements and Coordination:

A. The intent of the drawings and specifications is to obtain a complete and satisfactory installation. Separate divisional drawings and specifications shall not relieve the Contractor or subcontractors from full compliance of work of his trade indicated on any of the drawings or in any section of the specifications. Report conflicts prior to start of work.

B. Verify all field dimensions and locations of equipment to ensure close, neat fit with other trades' work. Make use of all contract documents and approved shop drawings to verify exact dimension and locations.

C. Coordinate work in this division with all other trades in proper sequence to ensure that the total work is completed within contract time schedule and with minimum cutting and patching.

D. Locate all equipment, piping, and apparatus symmetrical with architectural elements. Install to exact height and locations when shown on architectural drawings. When locations are shown only on plumbing drawings, be guided by architectural details and conditions existing at job and correlate this work with that of others. Provide all required work clearances as defined by code and manufacturer's recommendations.

E. Install work as required to fit structure, avoid obstructions, and retain clearance, headroom, openings and passageways. Cut no structural members without written approval from Engineer or Architect.

F. Carefully examine any existing conditions, piping, and premises. Compare drawings with existing conditions. Report any observed discrepancies. It shall be the Contractor's responsibility to properly coordinate the work and to identify problems in a timely manner. Written instructions will be issued by the Engineer to resolve discrepancies.

G. Because of the small scale of the drawings, it is not possible to indicate all offsets and fittings or to locate every accessory. Drawings are essentially diagrammatic. Study carefully the sizes and locations of structural members, wall and partition locations, trusses, and room dimensions and take actual measurements on the job. Locate piping, equipment and accessories with sufficient space for installing and servicing. Contractor is responsible for accuracy of his measurements and for coordination with all trades. Contractor shall not order materials or perform work without verification. No extra compensation will be allowed because field measurements vary from the dimensions on the drawings. If field measurements show that equipment or material

cannot be fitted, the Engineer shall be consulted. Remove and relocate, without additional compensation, any item that is installed and is later found to encroach on space assigned to another use.

1.9 Guarantee and Service:

A. The Contractor shall guarantee labor, materials and equipment for a period of one (1) year from Substantial Completion, or from Owner's occupancy, whichever is earlier. Contractor shall make good any defects and shall include all necessary adjustments to and replacement of defective items without expense to the Owner. Manufacturer warranties do not relieve the Contractor of this responsibility.

B. Owner reserves the right to make emergency repairs as required to keep equipment in operation without voiding Contractor's Guarantee Bond or relieving Contractor of his responsibilities during guarantee period.

C. Contractor shall provide service of all new equipment during the guarantee period without additional expense to the Owner.

1.10 Approval Submittals:

A. Shop drawings, product literature, and other approved submittals will only be reviewed if they are submitted in full accordance with the General and Supplementary Conditions and Division 1 Specification sections and the following:

1. Submittals shall include all applicable items referenced in each specification section, and not include items from more than one specification section in the same submittal.

2. Submittals shall be properly identified by a cover sheet showing the project name, Architect and Engineer names, submittal control numbers, specification section, a list of products or item names with model numbers in the order they appear in the package, and spaces for approved stamps. A sample cover sheet is included at the end of this section.

3. Submittals shall have been reviewed and approved by the General Contractor (or Prime Contractor). Evidence of this review and approval shall be an "Approved" stamp with a signature and date on the cover sheet.

4. Submittals shall be combined into a single submittal package with a table of contents. Submittals shall not be issued as multiple individual submittal packages.

5. The electrical design shown on the drawings supports the plumbing equipment basis of design specifications at the time of design. If plumbing equipment is submitted with different electrical requirements, it is the responsibility of the plumbing contractor to resolve all required electrical design changes (wire and conduit size, type of disconnect or overload protection, point(s) of connection, etc.) and clearly show the new electrical design on the plumbing submittal with a written statement that this change will be provided at no additional cost. Plumbing submittals made with no written reference to the electrical design will

be presumed to work with the electrical design. Any corrections required will be at no additional cost.

B. Before ordering any materials or equipment, and within 30 days after the award of the contract, the Contractor shall submit to the Architect/Engineer one complete schedule showing the make, type, manufacturer's name and trade designation of all equipment.

1. This schedule shall be accompanied by the required number of copies of the manufacturer's printed specifications and shop drawings for each piece of equipment or specialty and shall give dimensions, diagrams, descriptive literature, capacity or rating, kind of material, finish, guarantee, etc., and such other detailed information as the Architect/Engineer may require.
2. When approved, such schedule shall be an addition to these specifications, and shall be of equal force in that no deviation will be permitted except with the approval of the Architect/Engineer.

C. If the shop drawings show variation from the requirements of the contract documents, the Contractor shall make specific mention of such variation in his letter of transmittal. If acceptable, Contractor will not be relieved of the responsibility for executing the work in accordance with the contract.

D. Review of shop drawings, descriptive literature, catalog data, or schedules shall not relieve the Contractor from responsibility for deviations from contract drawings or specifications, unless he has in writing called to the attention of the Architect/Engineer such deviation at the time of submission, nor shall it relieve him from responsibility for errors of any sort in shop drawings, descriptive literature, catalog data, or schedules. Any feature or function specified but not mentioned in the submittal shall be assumed to be included per the specification.

E. Submit shop drawings and any other drawings called for in other sections. Shop drawings shall consist of plans, sections, elevations and details to scale (not smaller than 1/4" per foot), with dimensions clearly showing the installation. Direct copies of small-scale project drawings issued to the Contractor are not acceptable. Drawings shall take into account equipment furnished under other sections and shall show space allotted for it. Include construction details and materials.

F. Submit product data after award of the contract and before any equipment or materials are purchased. Product data are defined as manufacturer's printed literature specifically marked to indicate size and model and accompanied by rating sheets listing values showing that equipment meets scheduled or specified values. Properly coded stamp from the Engineer on returned submittal is required before ordering equipment.

G. Coordinate with other divisions supplying equipment prior to submitting shop drawings.

H. Shop drawings shall be submitted in one package unless approved otherwise by the Engineer. Provide an index of sections listing manufacturers and "as-specified" or not. Each specification section shall be tabbed with equipment inserted.

1.11 Test Reports and Verification Submittals: Submit test reports, certifications and verification letters as called for in other sections. Contractor shall coordinate the

required testing and documentation of system performance such that sufficient time exists to prepare the reports, review the reports, and take corrective action within the scheduled contract time.

1.12 O&M Data Submittals: Submit Operations and Maintenance data as called for in other sections when a copy of approved submittals is included in the O&M Manual, only the final "Furnish as Submitted" or "Furnish as Corrected" copy shall be used. Contractor shall organize these later in the O&M Manuals tabbed by specification number. Prepare O&M Manuals as required by Division 1 and as described herein. Submit manuals at the Substantial Completion inspection.

PART 2 - PRODUCTS

2.1 All materials shall be new or Owner-supplied reused as shown on the drawings, the best of their respective kinds, suitable for the conditions and duties imposed on them. The description, characteristics, and requirements of materials to be used shall be in accordance with qualifying conditions established in the following sections.

2.2 Equipment and Materials:

A. Any material or equipment used in any potable water system intended for human consumption, including inline devices (i.e. valves, fittings, pumps, meters) and end point devices (ie. drinking water fountains, faucets, ice makers, supply stops, control valves for dispensing), shall be certified "lead-free" in accordance with NSF/ANSI 61.

B. Equipment and materials furnished under this division shall be the product of a manufacturer regularly engaged in the manufacture of such items for a period of three years. Where practical, all of the components shall be products of a single manufacturer in order to provide proper coordination and responsibility. Where required, Contractor shall furnish proof of installation of similar equipment or materials.

C. Each item of equipment shall bear a nameplate showing the manufacturer's name, trade name, model number, serial number, ratings and other information necessary to fully identify it. This plate shall be permanently mounted in a prominent location and shall not be concealed, insulated or painted.

D. The label of the approving agency, such as UL, ASME, or FM, by which a standard has been established for each particular item, shall be in full view.

E. The equipment shall be essentially the standard product of a manufacturer regularly engaged in the production of such equipment and shall be a product of the manufacturer's latest design.

F. A service organization with personnel and spare parts shall be available within two hours for each type of equipment furnished.

G. Install in accordance with manufacturer's recommendations. Place in service by a factory trained representative where required.

H. Materials and equipment are specified herein by a single or by multiple manufacturers to indicate quality, material and type of construction desired. Manufacturer's products shown on the drawings have been used as basis for design; it shall be the Contractor's responsibility to ascertain that alternate manufacturer's products meet detailed specifications and that size and arrangement of the equipment are suitable for installation.

I. Model Numbers: Catalog numbers and model numbers indicated in the drawings and specifications are used as a guide in the selection of the equipment and are only listed for the Contractor's convenience. The Contractor shall determine the actual model numbers for ordering equipment and materials in accordance with the written description of each item and with the intent of the drawings and specifications.

J. All equipment and material shall be manufactured and assembled in the United States.

2.3 Requests for Substitution:

A. Where a particular system, product or material is specified by name, consider it as standard basis for bidding, and base proposal on the particular system, product or material specified. Other systems, products, equipment or materials may be accepted only if in the opinion of the Engineer, that they are equivalent in quality and workmanship and will perform satisfactorily its intended purpose. The Engineer shall approve all such substitutions in materials or equipment in writing. This shall occur prior to bidding.

B. In making requests for substitutions, the Contractor shall list the particular system, product, equipment or material he wishes to substitute and, at bid time, the Contractor shall state the amount he will add or deduct from his base bid if the substitution is approved by the Engineer. If the Contractor allows no deduction or addition to the base bid for such substitution, it shall be stated on the request.

C. Requests by the Contractor for substitution will be considered only when reasonable, timely, fully documented, and qualifying under one or more of the following circumstances.

1. Required product cannot be supplied in time for compliance with Contract time requirements.
2. Required product is not acceptable to governing authority, or determined to be non-compatible, or cannot be properly coordinated, warranted or insured, or has other recognized disabilities as certified by the Contractor.
3. Substantial cost advantage is offered to the Owner after deducting offsetting disadvantages including delays, additional compensation for redesign, investigation, evaluation and other necessary services and similar considerations.

D. All requests for substitution shall contain a “Comparison Schedule” and clearly and specifically indicate any and all differences and omissions between the product specified as the basis of design and the product proposed for substitution. Differences shall include, but not limited to, data as follows for both the specified and substituted products:

1. Principle of operation.

2. Materials of construction or finishes.
3. Thickness or gauge of materials.
4. Weight of item.
5. Deleted features or items.
6. Added features or items.
7. Changes in other work caused by the substitution.
8. Performance and rating data.

E. If the approved substitution contains differences or omissions not specifically called to the attention of the Engineer, the Owner reserves the right to require equal or similar features to be added to the substituted products at the Contractor's expense.

2.4 Prior Approval: Prior Approval shall be required for any manufacturer other than those listed for all specified items in the drawings and specifications. Submit all requests for approval of the alternate manufacturer's products two weeks prior to bid opening. Approval will be in the form of an Addendum to the drawings and specifications. Clearly indicate all differences between the specified and proposed product following the guidelines for substitution herein. This requirement may be waived if, in the opinion of the Engineer, it is in the best interest of the Owner. Submittals received after award of the bid for equipment that has not been Prior Approved shall be subject to immediate rejection.

PART 3 - EXECUTION

3.1 Workmanship: All materials and equipment shall be installed and completed in a first-class workmanlike manner and in accordance with the best modern methods and practice. Any materials installed which do not present an orderly and reasonably neat and/or workmanlike appearance, or do not allow adequate space for maintenance, shall be removed and replaced when so directed by the Architect/Engineer.

3.2 Coordination:

A. The Contractor shall be responsible for full coordination of the plumbing systems with shop drawings of the building construction so the proper openings and sleeves or supports are provided for piping or other equipment passing through slabs or walls.

B. Any additional steel supports required for the installation of any plumbing equipment or piping shall be furnished and installed under the section of the specifications requiring the additional supports.

C. It shall be the Contractor's responsibility to verify all equipment such as valves and such other apparatus or equipment that may require maintenance and operation are made easily accessible, regardless of the diagrammatic location shown on the drawings.

D. All connections to fixtures and equipment shown on the drawings shall be considered diagrammatic unless otherwise indicated by detail. The actual connections shall be made to fully suit the requirements of each case and adequately provide for expansion and servicing.

E. The Contractor shall protect equipment, material, and fixtures at all times during storage and construction. The Contractor shall replace all equipment, material, and fixtures which are damaged as a result of inadequate protection.

F. Prior to starting and during progress of work, examine work and materials installed by others as they apply to work in this division. Report conditions which will prevent satisfactory installation.

G. Start of work will be construed as acceptance of suitability of work of others.

3.3 Interruption of Service: Before any equipment is shut down for disconnection or tie-ins, arrangements shall be made with the Architect/Engineer and this work shall be done at the time best suited to the Owner. This will typically be on weekends and/or holidays and/or after normal working hours. Services shall be restored the same day unless prior arrangements are made. All overtime or premium costs associated with this work shall be included in the base bid.

3.4 Phasing: Provide all required temporary valves, piping, equipment and devices as required. Maintain temporary services to areas as required. Remove all temporary material and equipment on completion of work unless Engineer concurs that such material and equipment would be beneficial to the Owner on a permanent basis.

3.5 Cutting and Patching: Contractor shall be responsible for cutting and patching of all holes, chases, sleeves, and other openings required for installation of equipment furnished and installed under these Specifications. Utilize experienced trades for cutting and patching. Obtain permission from Architect/Engineer before cutting any structural items.

3.6 Equipment Setting: Bolt equipment directly to concrete pads or vibration isolators as required, using hot-dipped galvanized anchor bolts, nuts and washers. Level equipment.

3.7 Painting: Touch-up factory finishes on equipment located inside and outside shall be done under Division 22. Obtain matched color coatings from the manufacturer and apply as directed. If corrosion is found during inspection on the surface of any equipment, clean, prime, and paint as required. If corrosion is found to be extensive by the Engineer, the equipment shall be removed and replaced with factory new at the expense of the Contractor.

3.8 Cleanup: Thoroughly clean all exposed parts of apparatus and equipment of cement, plaster, and other materials and remove all oil and grease spots. Repaint or touch up as required to look like new. During progress of work, Contractor is to carefully clean up and leave premises and all portions of building free from debris and in a clean and safe condition.

3.9 Startup and Operational Test: Start each item of equipment in strict accordance with the manufacturer's instructions; or where noted under equipment specification, startup shall be done by a qualified representative of the manufacturer. Alignment, lubrication, safety, and operating control shall be included in startup check.

3.10 Record Drawings:

A. During the progress of the work, the Contractor shall record on his field set of drawings the exact location, as installed, of all piping, equipment, and other systems which are not installed exactly as shown on the contract drawings.

B. Upon completion of the work, record drawings shall be prepared as described in the General Conditions, Supplementary Conditions, and Division 1 sections.

3.11 Acceptance:

A. Request inspections as required under the Supplementary or General Conditions. Conceal no work until inspected.

B. Punch List: Submit written confirmation that all punch lists have been checked and the required work completed. The Contractor shall pay, at the Engineer's current billing rate, for additional field time required by the Engineer to report or check on previous punch list deficiencies.

C. Instructions: At completion of the work, provide a competent and experienced person who is thoroughly familiar with project, for a period deemed necessary by the Owner to instruct permanent operating personnel in the operation of equipment and control systems.

D. Operation and Maintenance Manuals: Furnish complete manuals electronically and organized by system or section. Manuals shall contain:

1. Detailed operating instructions and instructions for making minor adjustments.
2. Routine maintenance operations.
3. Manufacturer's catalog data, service instructions, and parts lists for each piece of operating equipment.
4. Copies of approved submittals.
5. Copies of all manufacturers' warranties.
6. Copies of test reports and verification submittals.

E. Warranties: Submit copies of all manufacturers' warranties.

F. Record Drawings: Submit record drawings.

This is a sample cover sheet. Use one for each shop drawing.

PROJECT NAME
PROJECT NUMBER

SAMPLE

ARCHITECT/ENGINEER: Dell Consulting, LLC

CONTRACTOR: XYZ Construction

SUBCONTRACTOR: ABC Plumbing Contractor

SUPPLIER: Supply Company

MANUFACTURER: Manufacturer

DATE: MM/DD/YYYY

Any standard heading is acceptable

SECTION: 22 XX XX / Section Name

1. Description: Manufacturer, Model

2. Description: Manufacturer, Model

3. Description: Manufacturer, Model

4. Description: Manufacturer, Model

5. Description: Manufacturer, Model

List each item separately; include manufacturer name and model number

General Contractor's APPROVAL stamp must be on this sheet.

END OF SECTION

SECTION 220010 – CODES AND STANDARDS

PART 1 - GENERAL

1.1 All work under Division 22 shall be constructed in accordance with the codes and standards listed herein. The design has been based on the requirements of these codes and standards. While it is not the responsibility of the Contractor to verify that all work called for complies with these codes and standards, the Contractor shall be responsible for calling to the Architect/Engineer's attention any details on the drawings or specifications that are not in conformance with these or other codes and standards.

1.2 Comply with regulations and codes of utility suppliers.

1.3 Where no specific method or form of construction is called for in the contract documents, the Contractor shall comply with code requirements when carrying out such work.

1.4 Where code conflict exists, the most stringent requirement applies. Comply with current code edition, unless noted.

PART 2 - CODES

2.1 The latest applicable version of the following codes shall govern all work:

1. International Building Code
2. International Existing Building Code
3. International Fire Code
4. International Plumbing Code
5. International Mechanical Code
6. International Fuel Gas Code
7. International Energy Conservation Code
8. ANSI/ASHRAE/IESNA Standard 90.1 Energy Standard for Buildings Except Low-Rise Residential
9. National Electric Code (NFPA 70)
10. Fire Alarm and Signaling Code (NFPA 72)
11. Fire Code (NFPA 1)
12. Life Safety Code (NFPA 101)

PART 3 - STANDARDS

3.1 All plumbing materials, installation and systems shall meet the requirements of the following standards, including the latest addenda and amendments, to the extent referenced:

1. Underwriters' Laboratories (UL)
2. Factory Mutual Global (FM)
3. American National Standards Institute (ANSI)
4. American Society of Testing Materials (ASTM)
5. National Fire Protection Association (NFPA)
6. National Electrical Manufacturers Association (NEMA)

END OF SECTION

SECTION 220020 – PLUMBING RELATED WORK

PART 1 - GENERAL

1.1 Related Documents:

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification sections, apply to this Section.

B. This is a Common Work Results for Plumbing section. Provisions of this section apply to work of all Division 22 sections.

C. Coordinate with the General Contractor for all cutting and patching. Contractors performing Division 22 work shall inform the General Contractor of all cutting and patching required prior to bidding and shall coordinate installation.

PART 2 - DIVISION 2 – SITE WORK

2.1 Specific requirements for excavation and backfill for underground piping are contained in Section 220550.

2.2 Refer to Division 2 – Site Work for:

A. All water, sewer, and storm water piping greater than five feet from the building.

B. Manholes and catch-basins.

C. Underground tanks and enclosures.

D. Septic tanks and drainfields.

2.3 The following work is part of Division 22:

A. All site piping within five feet of building footprint.

B. Underground tanks and enclosures within five feet of building footprint.

C. Grease trap.

PART 3 - DIVISION 3 – CONCRETE

3.1 Refer to Division 3 – Concrete for:

A. Rough grouting in and around plumbing work.

B. Cutting and patching concrete to accommodate plumbing work.

3.2 The following work is part of Division 22, complying with the requirements of Division 3:

A. Curbs, foundations and pads for plumbing equipment.

B. Basins, sumps, and vaults for plumbing work.

C. Underground structural concrete to accommodate plumbing work.

D. Inertia bases.

PART 4 - DIVISION 4 – MASONRY

4.1 Refer to Division 4 – Masonry for:

A. Installation of access doors in walls.

PART 5 - DIVISION 5 – METALS

5.1 Refer to Division 5 – Metals for:

A. Framing openings for plumbing equipment.

5.2 The following work is part of Division 22:

A. Supports for plumbing work.

PART 6 - DIVISION 6 – WOOD, PLASTICS, AND COMPOSITES

6.1 Refer to Division 6 – Wood, Plastics, and Composites for:

A. Framing openings for plumbing equipment.

PART 7 - DIVISION 7 – THERMAL AND MOISTURE PROTECTION

7.1 Refer to Division 7 – Thermal and Moisture Protection for:

A. Installation of all roof curbs and roof supports for plumbing work.

B. Caulking and waterproofing of all wall- and roof-mounted plumbing work.

C. Flashing of all roof curbs and roof vents.

7.2 The following work is part of Division 22, complying with the requirements of Division 7:

A. Fire barrier penetration seals.

PART 8 - DIVISION 9 – FINISHES

8.1 Refer to Division 9 – Finishes for:

A. Painting exposed piping and equipment.

B. Painting structural metal and concrete for plumbing work.

C. Painting access panels.

D. Painting color-coded plumbing work indicated for continuous painting. See color schedule in Division 22 Section, "Plumbing Identification".

E. Installation of access doors in gypsum drywall.

8.2 Colors shall be selected by the Architect for all painting of exposed plumbing work in occupied spaces, unless specified herein. Do not paint insulated or jacketed surfaces.

8.3 The following work is part of Division 22:

A. Touch-up painting of factory finishes.

B. Painting of all hangers.

PART 9 - DIVISION 11 – EQUIPMENT

9.1 Refer to Division 11 – Equipment for:

A. All food service equipment including ranges, ovens, dishwashers, and related food preparation equipment and accessories.

9.2 The following work is part of Division 22:

A. All trim including faucets, waste connections, drain traps, vents, valves, piping, flashing, fittings, strainers, and other materials necessary to make equipment operational. Provide rough-in for all equipment. Provide final connections for all equipment.

B. All automatic gas valves for shutoff to cooking appliances when fire suppression system activates. Coordinate type of valve with fire suppression system supplier.

9.3 Refer to Division 11 – Equipment for:

A. All laboratory equipment including cabinets, casework, workstations, fume hoods, eyewash stations, and all related fixtures, fittings, and trim.

9.4 The following work is part of Division 22:

A. All final connections necessary to make laboratory equipment operational.

B. All trim not furnished by Division 11 including drains, wastes, traps, and similar devices necessary to make fixtures operational. Provide rough-in for all fixtures. Provide final connections for all fixtures.

PART 10 - DIVISION 26 – ELECTRICAL

10.1 Plumbing contractor shall coordinate the exact electrical requirements of all plumbing equipment being provided with the electrical contractor. Where approval submittals are required, this coordination shall be accomplished prior to making the submittals.

The electrical design shown on the drawings supports the plumbing equipment basis of design. If plumbing equipment is submitted with different electrical requirements, it is the responsibility of the plumbing contractor to resolve all required electrical design changes (wire and conduit size, type of disconnect or overload protection, point(s) of connection, etc.) and clearly show the new electrical design on the plumbing submittal with a written statement that this design will be provided at no additional cost. Plumbing submittals made with no written reference to the electrical design will be presumed to work with the electrical design. Any corrections required will be at no additional cost.

10.2 Electrical contractor shall provide disconnect switches, starters, and contactors for plumbing equipment unless specifically noted as being furnished as part of the plumbing equipment.

10.3 Electrical contractor shall provide all power wiring, raceway and devices, and make final electrical connections to all plumbing equipment, switches, starters, contactors, controllers, and similar equipment.

END OF SECTION

SECTION 220553 – PLUMBING IDENTIFICATION

PART 1 - GENERAL

1.1 Related Documents:

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

B. This section is a Division 22 Common Work Results for Plumbing section, and is part of each Division 22 section making reference to or requiring identification devices specified herein.

C. Extent of plumbing identification work required by this section is indicated on drawings and/or specified in other Division 22 sections.

D. Refer to Division 26 sections for identification requirements of electrical work (not work of this section).

1.2 Codes and Standards: Comply with ANSI A13.1 for lettering size, length of color field, colors, and viewing angles of identification devices.

PART 2 - PRODUCTS

2.1 General: Provide manufacturer's standard products of categories and types required for each application as referenced in other Division 22 sections. Where more than a single type is specified for application, selection is the Contractor's option, but provide single selection for each product category.

2.2 Painted Identification Materials:

A. Stencils: Standard fiberboard stencils, prepared for required applications with letter sizes generally complying with recommendations of ANSI A13.1 for piping and similar applications, but not less than 3/4" high letters for access door signs and similar operational instructions.

B. Stencil Paint: Standard exterior type stenciling enamel; black, except as otherwise indicated; either brushing grade or pressurized spray-can form and grade.

C. Identification Paint: Standard identification enamel.

2.3 Plastic Pipe Markers:

A. Pressure-Sensitive Type: Provide manufacturer's standard pre-printed, permanent adhesive, color-coded, pressure-sensitive vinyl pipe markers.

B. Snap-On Type: Provide manufacturer's standard pre-printed, color-coded pipe markers designed to snap around the pipe without the need for adhesive.

C. Lettering: Manufacturer's standard pre-printed nomenclature which best describes piping system in each instance, as selected by Architect/Engineer in cases of variance with name as shown or specified.

D. Arrows: Print each pipe marker with arrows indicating direction of flow, either integrally with piping system service lettering (to accommodate both directions), or as separate unit of plastic.

2.4 Valve Tags:

A. Brass Valve Tags: Provide 19-gauge polished brass valve tags with stamp-engraved piping system abbreviation in 1/4" high letters and 1/2" high sequenced valve numbers, and with 5/32" hole for fastener. Provide 1-1/2" diameter tags, except as otherwise indicated.

B. Plastic Laminate Valve Tags: Provide manufacturer's standard 3/32" thick engraved plastic laminate valve tags, with piping system abbreviation in 1/4" high letters and 1/2" high sequenced valve numbers, and with 5/32" hole for fastener. Provide 1-1/2" square black tags with white lettering, except as otherwise indicated.

2.5 Engraved Plastic-Laminate Signs:

A. General: Provide engraving stock melamine plastic laminate, in the sizes and thicknesses indicated, engraved with engraver's standard letter style a minimum of 3/4" tall and wording indicated, punched for mechanical fastening except where adhesive mounting is necessary because of substrate.

B. Thickness: 1/16" for units up to 20 square inches or 8" length; 1/8" for larger units.

C. Fasteners: Self-tapping stainless steel screws, except contact-type permanent adhesive where screws cannot or should not penetrate the substrate.

2.6 Stamped Nameplates: Provide equipment manufacturer's standard stamped nameplates for motors, pumps, etc.

PART 3 - EXECUTION

3.1 Coordination: Where identification is to be applied to surfaces which require insulation, painting or other covering or finish, including valve tags in finished mechanical spaces, install identification after completion of covering and painting. Install identification prior to installation of acoustical ceilings and similar removable concealment.

3.2 Piping System Identification:

A. General: Install pipe markers of one of the following types on each system indicated to receive identification, and include arrows to show normal direction of flow:

1. Plastic pipe markers.
2. Stenciled markers of black or white for best contrast.

B. Locate pipe markers as follows wherever piping is exposed to view in occupied spaces, machine rooms, accessible maintenance spaces and exterior non-concealed locations.

1. Near each valve and control device.
2. Near each branch, excluding short take-offs for fixtures and terminal units. Mark each pipe at branch where there could be question of flow pattern.
3. Near locations where pipes pass through walls or floors/ ceilings or enter non-accessible enclosures.
4. At access doors, manholes, and similar access points which permit view of concealed piping.
5. Near major equipment items and other points of origination and termination.
6. Spaced intermediately at maximum spacing of 50' along each piping run, except reduce spacing to 25' in congested areas of piping and equipment.
7. On piping above removable acoustical ceilings, except omit intermediately spaced markers.

C. The following piping shall be color-coded where exposed outdoors and in mechanical and electrical rooms by completely painting the piping with the indicated color. Use standard colors where exposed in finished spaces. Use standard identification methods in concealed areas.

1. Gas piping – Yellow

3.3 Valve Identification: Provide coded valve tag on every valve, cock and control device in each piping system; exclude check valves, valves within factory-fabricated equipment units, plumbing fixture faucets, convenience and lawn-watering hose bibs, and shut-off valves at plumbing fixtures, and similar rough-in connections of end-use fixtures and units.

3.4 Valve Charts: Provide framed, glass-covered valve charts in each mechanical room. Identify coded valve number, valve function, and valve location for each valve.

3.5 Plumbing Equipment Identification: Install engraved plastic laminate sign on or near each major item of plumbing equipment and each operational device. Label shall indicate type of system and area served. Provide signs for the following general categories of equipment and operational devices:

1. Main control and operating valves, including safety devices.

2. Meters, gages, thermometers and similar units.
3. Fuel-burning units including boilers, furnaces and heaters.
4. Electric water heaters.
5. Pumps, compressors, and similar equipment.
6. Heat exchangers, heat recovery units, and similar equipment.
7. Tanks and pressure vessels.

3.6 Stamped Nameplates: Equipment manufacturers to provide standard stamped nameplates on all major equipment items such as motors, pumps, water heaters, etc. Where motors are hidden from view (within equipment casing, or otherwise not easily accessible, etc.), the equipment supplier shall furnish a duplicate motor data nameplate to be affixed to the equipment casing in an easily visible location, unless data is already included on the equipment nameplate.

3.7 Adjusting and Cleaning:

A. Relocate any plumbing identification device which has become visually blocked by work of this division or other divisions.

B. Clean face of each identification device and glass frame of each valve chart.

END OF SECTION

SECTION 221700 – GAS SYSTEM

PART 1 - GENERAL

1.1 Related Documents:

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

B. Division 22 Common Work Results for Plumbing sections apply to work of this section.

C. Extent of gas systems work is indicated on drawings and schedules, and by requirements of this section.

D. Refer to other Division 22 sections for excavation and backfill required in conjunction with gas piping.

1.2 Codes and Standards:

A. NFPA Compliance: Fabricate and install gas systems in accordance with NFPA 54 "National Fuel Gas Code".

B. Utility Compliance: Fabricate and install gas systems in accordance with local gas utility company requirements and standards.

1.3 Approval Submittals:

A. Product Data: Submit manufacturer's technical product data and installation instructions for:

1. Gas cocks and/or ball valves.
2. Master gas control valve.
3. Laboratory gas cocks.
4. Gas vents.
5. Gas regulators.
6. Kitchen gas appliance connectors.
7. Gas appliance connectors.
8. Access doors.

1.4 O&M Data Submittals: Submit a copy of all approval submittals. Submit maintenance data and parts list for gas cocks, ball valves, control valves, lab gas cocks, appliance connectors, gas vents, regulators. Include in O&M Manual.

PART 2 - PRODUCTS

2.1 General: Provide piping materials and factory-fabricated piping products of sizes, types, pressure ratings, and capacities as indicated. Where not indicated, provide proper selection as determined by Installer to comply with installation requirements. Provide materials and products complying with NFPA 54 where applicable. Base pressure rating on gas piping system maximum design pressures. Provide sizes and types matching piping and equipment connections; provide fittings of materials which match pipe materials used in gas systems. Where more than one type of materials or products is indicated, selection is Installer's option.

2.2 Basic Identification: Provide identification complying with Division 22 Common Work Results for Plumbing section "Plumbing Identification."

2.3 Basic Pipes and Pipe Fittings: Provide pipes and pipe fittings in accordance with the following listing:

A. Gas Service Piping:

1. All Pipe Sizes: Schedule 40 black steel pipe with wrought-steel buttwelding fittings.

2. Wrapping: Machine wrap black steel pipe using 50% overlap wrap, with polyvinyl chloride tape. Hand wrap fittings using 100% overlap wrap extending 6" beyond fitting onto wrapped pipe. Comply with tape manufacturer's installation instructions.

3. Pipe Sizes 1/2" Through 12": Thermoplastic gas pressure pipe, tubing, and fittings complying with ASTM D 2513.

4. Pipe Sizes 2" Through 12": Reinforced epoxy resin gas pressure pipe and fittings complying with ASTM D 2517.

B. Building Distribution Piping:

1. Pipe Size 2" and Smaller: Schedule 40 black steel pipe with malleable-iron threaded fittings.

2. Pipe Sizes 2" and Smaller: Gas piping within each laboratory shall be Type L hard drawn copper with silver solder brazed joints.

3. Pipe Size 2½" and Larger: Schedule 40 black steel pipe with wrought-steel buttwelding fittings.

2.4 Sleeves and Sleeve Seals: Provide sleeves and sleeve seals complying with Division 22 Common Work Results for Plumbing section "Sleeves and Sleeve Seals".

2.5 Sealants: Provide UL-listed or AGA approved sealants for gas piping.

2.6 Basic Hangers and Supports: Provide hangers and supports complying with Division 22 Common Work Results for Plumbing section "Hangers and Supports".

2.7 Valves: Provide valves complying with Division 22 Common Work Results for Plumbing section "Valves" and the following listing:

A. Gas Cocks 2" and Smaller: UL-listed, AGA approved, 150 psi non-shock WOG, full port, bronze straightway cock, flat or square head, threaded ends.

B. Gas Cocks 2-1/2" and Larger: UL-listed, CGA approved, MSS SP-78; 175 psi, lubricated plug type, full port, semi-steel body, single gland, wrench operated, flanged ends.

C. Acceptable Manufacturers for Gas Cocks: Subject to compliance with requirements, provide products of Resun R1430 and R1431, Milliken 200M and 201M, or approved equal.

D. Laboratory Master Shutoff Valves: Type BA3.

E. Master Gas Control Valve: Bronze or aluminum body, packless, single seat, suitable for fuel gas, solenoid operated, normally open, UL-approved, manual reset, 24 volt DC. The valve shall close when de-energized by the FACP. Acceptable Manufacturer: Subject to compliance with requirements, provide products of one of the following: Automatic Switch Co., Bulletin 8044, or approved equal.

F. Laboratory gas cocks are specified in Division 22 section "Plumbing Fixtures".

G. Laboratory gas cocks are furnished by the laboratory equipment supplier.

2.8 Kitchen Gas Appliance Connectors: Provide kitchen gas appliance connectors of annealed 304 stainless steel tubing with Type 304 stainless steel braiding to protect tubing from elongation and a PVC coating surrounding steel braiding with suitable ends for appliance connection. Provide NSF & (AGA or CGA) approvals. Where kitchen equipment gas appliance connectors serve movable appliance (on castors), provide swivel fittings and quick connects that close upon disconnecting. Hose length for movable appliances shall be 1.25 times the depth of the appliance. Appliance restraining device shall prevent over extension of connecting tube.

2.9 Gas Appliance Tube Connectors: Provide commercial grade appliance connectors with a 2 year manufacturer's warranty. Tubing shall be Type 304 stainless steel tubing with type 304 stainless steel braiding to protect tubing from elongation. Tubing shall be complete with factory installed end connectors. Provide products that are AGA or CGA approved. Indicate maximum BTU input for each length and size used on submittal.

2.10 Gas Vents:

A. Single Wall Construction: Provide UL-1738 single wall, factory-built vent system designed for use with Category II or IV condensing gas-fired appliances. The vent system shall be

constructed from flame-resistant polypropylene and be continuous from the equipment flue outlet to the vent termination located outside. All vent system components (vent supports, roof or wall penetrations, terminations, equipment connectors, drain fittings) required to install the vent system shall be UL listed and provide by the manufacturer. Vent layout shall be designed and installed in compliance with the manufacturer's installation instructions. Acceptable Manufacturer: Subject to compliance with requirements, provide single wall vent system by Centrotherm, IPEX, or approved equal.

B. Double Wall Construction: Provide Type B double wall gas vent system for gas-fired appliances, except where noted otherwise on the drawings. Metalbestos Style RV(3"-8") or QC(10"-24"). The system shall include pipe, top, flashing cone, storm collar, joist shield, support plates, firestops, and fittings as required by the manufacturer for a complete installation. Acceptable Manufacturer: Subject to compliance with requirements, provide products of one of the following: Metalbestos, Hart and Cooley, or approved equal.

2.11 Gas Regulators:

A. First Stage Regulators: Provide UL listed first stage (high pressure) regulators set for 15 psi.

B. Second Stage Regulators: Provide UL listed second stage (1-5 psi) adjustable regulators with integral relief valves.

C. Acceptable Manufacturers: Subject to compliance with requirements, provide regulators by Rego, or approved equal.

2.12 Gas Meter and Regulator: Provided by local utility company. Coordinate with manufacturer's requirements for regulators at individual gas trains to gas-fired appliances and equipment.

2.13 Access Doors: Provide access doors to service all valves and other devices as required in accordance with Division 22 Common Work Results for Plumbing section "Access Doors".

PART 3 - EXECUTION

3.1 General: Examine areas and conditions under which gas systems materials and products are to be installed. Do not proceed with work until unsatisfactory conditions have been corrected in manner acceptable to Installer. Coordinate with gas supplier prior to starting work.

3.2 Install plumbing identification in accordance with Division 22 Common Work Results for Plumbing section "Plumbing Identification".

3.3 Installation of Gas Piping:

A. General: Install pipes and pipe fittings in accordance with recognized industry practices which will achieve permanently-leakproof piping systems, capable of performing each indicated service without piping failure. Install each run with minimum joints and couplings, but with adequate and accessible unions for disassembly and maintenance or replacement of valves and equipment.

B. Comply with ANSI B31 Code for Pressure Piping.

C. Locate piping runs, except as otherwise indicated, vertically and horizontally and avoid diagonal runs wherever possible. Orient horizontal runs parallel with walls and column lines. Locate runs as shown or described by diagrams, details and notations or, if not otherwise indicated, run piping in shortest route which does not obstruct usable space or block access for servicing building and its equipment. Hold piping close to walls, overhead construction, columns and other structural and permanent-enclosure elements of building; limit clearance to 1/2" where furring is shown for enclosure or concealment of piping.

D. Concealed Piping: Unless specifically noted as "Exposed" on the drawings, conceal piping from view in finished and occupied spaces, by locating in column enclosures, chases, in hollow wall construction or above suspended ceilings; do not encase horizontal runs in solid partitions, except as indicated.

E. Electrical Equipment Spaces: Do not run piping through transformer vaults and other electrical, communications, or data equipment spaces and enclosures unless shown.

F. Cut pipe from measurements taken at the site, not from drawings. Keep pipes free of contact with building construction and installed work.

G. Connect branch-feed piping to mains at horizontal center line of mains, connect run-out piping to branches at horizontal center line of branches.

H. Locate groups of pipes parallel to each other, spaced to permit servicing of valves.

I. Isolate all copper tubing from steel and concrete by wrapping the pipe at the contact point, and for one inch on each side, with a continuous plastic sleeve. Isolate all copper tubing installed in block walls with a continuous plastic sleeve.

J. Use sealants on metal gas piping threads which are chemically resistant to gas. Use sealants sparingly, and apply to only male threads of metal joints.

K. Remove cutting and threading burrs before assembling piping.

L. Do not install defective piping or fittings. Do not use pipe with threads which are chipped, stripped or damaged. Do not use bushings in the gas system.

M. Plug each gas outlet, including valves, with threaded plug or cap immediately after installation and retain until continuing piping, or equipment connections are completed.

N. Ground gas piping electrically and continuously within project, and bond tightly to grounding connection.

O. Install drip-legs in gas piping where indicated, and where required by code or gas company requirements. Install drip legs at every turn up to equipment, and at the bottom of every drop to equipment. Install drip leg on the main gas line to the building.

P. Install "Tee" fitting with bottom outlet plugged or capped, at bottom of pipe risers.

Q. Use dielectric unions where dissimilar metals are joined together.

R. Install piping with 1/64" per foot (1/8%) downward slope in direction of flow.

S. Install piping parallel to other piping, but maintain minimum of 12" clearance between gas piping and steam or hydronic piping above 200°F.

T. For piping underground beneath buildings, install in welded conduit. Extend conduit inside and terminate in accessible portion of building and seal. Extend conduit outside minimum of 4" from building, and vent above grade.

3.4 Gas Service: Arrange with utility company to provide gas service to indicated location with meter, pressure regulator and shutoff at terminus. Consult with utility as to extent of its work, costs, fees, and permits involved. The Owner // Contractor shall pay such costs and fees and obtain permits.

3.5 Installation of Piping System Joints: Provide joints of the type indicated in each piping system.

A. Solder copper tube-and-fitting joints where indicated, in accordance with recognized industry practice. Cut tube ends squarely, ream to full inside diameter, and clean outside of tube ends and inside of fittings. Apply non-acid type solder flux to joint areas of both tubes and fittings. Insert tube full depth into fitting, and solder in manner which will draw solder full depth and circumference of joint. Wipe excess solder from joint before it hardens.

B. Thread pipe in accordance with ANSI B2.1; cut threads full and clean using sharp dies. Ream threaded ends to remove burrs and restore full inside diameter. Apply pipe joint compound, or pipe joint tape (Teflon) where recommended by pipe/fitting manufacturer, on male threads at each joint and tighten joint to leave not more than 3 threads exposed. Paint exposed threads to retard rusting.

C. Weld pipe joints in accordance with recognized industry practice and as follows. Be guided by ANSI B.31.

1. Weld pipe joints only when ambient temperature is above 0°F.

2. Bevel pipe ends at a 37.5° angle where possible, smooth rough cuts, and clean to remove slag, metal particles and dirt.

3. Use pipe clamps or tack-weld joints; 4 welds for pipe sizes to 10". All welds shall be open-butt.

4. Build up welds with root pass, followed by filler pass and then a cover pass. Eliminate valleys at center and edges of each weld. Weld by procedures which will ensure elimination of unsound or unfused metal, cracks, oxidation, blow-holes and non-metallic inclusions.

5. Do not weld-out piping system imperfections by tack-welding procedures; refabricate to comply with requirements.

6. At Installer's option, install forged branch-connection fittings wherever branch pipe is less than 3" and at least two pipe sizes smaller than main pipe indicated; or install regular "T" fitting. Weld-O-Let or equal.

7. All field welding and cutting using oxygen-acetylene methods within the building shall be performed in accordance with NFPA-51B (2014).

8. Limit the use of welded piping to shop-fabricated only. Neither welding nor cutting with oxygen-acetylene methods will be permitted within the envelope of the hospital building.

3.6 Install sleeves and sleeve seals in accordance with Division 22 Common Work Results for Plumbing section "Sleeves and Sleeve Seals".

3.7 Install hangers and supports in accordance with Division 22 Common Work Results for Plumbing section "Hangers and Supports".

3.8 Installation of Valves:

A. Gas Cocks: Provide at connection to gas train for each gas-fired equipment item; and on risers and branches where indicated.

B. Locate gas cocks where easily accessible, and where they will be protected from possible injury.

C. Control Valves: Install as indicated. Refer to Division 26 for wiring (not work of this section).

3.9 Equipment Connections: Connect gas piping to each gas-fired equipment item, with union, drip leg, and shutoff gas cock. Comply with equipment manufacturer's instructions.

3.10 Appliance Connectors: Install tubing, valves, connectors, fittings in accordance with their listing. Hose, fittings, and valves shall not restrict gas flow and shall be rated for the

capacity of the appliance they serve. Hoses shall not be crimped. Hoses behind movable appliances shall not be crimped when appliance is extended from wall or when appliance is set in working position. Appliance restraining device shall set to engage just prior to the connector being fully extended. Check all tubing, piping, fittings & valves for leakage at less than 50 parts per million.

3.11 Access Doors: Locate and coordinate installation of access doors for all valves and devices in accordance with Division 22 Common Work Results for Plumbing section "Access Doors".

3.12 Gas Vent Installation:

A. Install gas vents for all gas-fired appliances in accordance with NFPA 54 and the manufacturer's instructions. Provide all flashing and related materials.

B. Gas vents shall terminate at least 3 feet above the roof and 2 feet higher than any portion of a building within a horizontal distance of 10 feet.

C. Minimum vertical gas vent length is 5 feet.

D. Slope horizontal gas vent connectors upward at least 1/4" per foot.

3.13 Piping Tests: Inspect, test, and purge gas systems in accordance with NFPA 54, local utility requirements, and Division 22 Common Work Results for Plumbing section "Testing, Cleaning, and Sterilization for Plumbing Piping".

END OF SECTION

SECTION 26 00 00

GENERAL ELECTRICAL

PART 1 - GENERAL

1.1 The work covered by this division consists of providing all labor, equipment and materials and performing all operations necessary for the installation of the electrical work as herein called for and shown on the Drawings. The work shall include but shall not be limited to the following:

Provide all power, lighting, fire alarm, intercom, telephone, communications, and other electrical systems for the project. Fully coordinate all electrical requirements of equipment being furnished by other Divisions under this construction contract. Each system shall be complete and fully functional.

1.2 Related Documents:

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to work of this Section.

B. Provisions of this Section apply to work of all Division 26 Sections.

C. All control wiring for Division 23 shall be governed by Division 26 requirements. All control wiring shall be in conduit in compliance with the Specifications.

D. Review all project Drawings to be aware of conditions affecting work herein.

1.3 Definitions:

A. Provide: Furnish, install, and test, complete and ready for intended use.

B. Furnish: Supply and deliver to project site, ready for subsequent requirements.

C. Install: Operations at project site, including unloading, unpacking, assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar requirements.

1.4 Permits and Fees: Contractor shall obtain all necessary permits, meters, and inspections required for his work and pay all fees and charges incidental thereto.

1.5 Verification of Owner's Survey Data: Prior to commencing any excavation or grading the Contractor shall satisfy himself as to the accuracy of all survey data indicated on the Drawings and/or provided by the Owner. Should the Contractor discover any inaccuracies, errors, or omissions in the survey data, he shall immediately notify the En

gineer. Commencement by the Contractor of any excavation or upgrading shall be held as an acceptance of the survey data by him after which time the Contractor has no claim against the Owner resulting from alleged errors, omissions or inaccuracies of the said survey data.

1.6 Delivery and Storage of Materials: Materials delivered to site shall be inspected for damage, unloaded, and stored with a minimum of handling. All material shall be stored to provide protection from the weather and accidental damage.

1.7 Extent of work is indicated in the Drawings, Schedules, and Specification. Singular references shall not be construed as requiring only one device if multiple devices are shown on the Drawings or are required for proper system operation.

1.8 Field Measurements and Coordination:

A. The intent of the Drawings and Specifications is to obtain a complete and satisfactory installation. Separate divisional Drawings and Specifications shall not relieve the Contractor or Subcontractors from full compliance of work of his trade indicated on any of the Drawings or in any Section of the Specifications. Report conflicts prior to start of work.

B. Verify all field dimensions and locations of equipment to ensure close, neat fit with other trades' work. Make use of all Contract Documents and approved shop drawings to verify exact dimension and locations. Do not scale electrical drawings; rely on dimensions shown on architectural or structural drawings.

C. Coordinate work in this Division with all other trades in proper sequence to ensure that the total work is completed within Contract time schedule and with minimum cutting and patching.

D. Locate all equipment, materials, and apparatus symmetrical with architectural elements. Install to exact height and locations when shown on architectural drawings. When locations are shown only on mechanical drawings, be guided by architectural details and conditions existing at job and correlate this work with that of others. Provide all required work clearances as defined in the NEC.

E. Install work as required to fit structure, avoid obstructions, and retain clearance, headroom, openings, and passageways. Cut no structural members without written approval from Engineer or Architect.

F. Carefully examine any existing conditions, piping, and premises. Compare Drawings with existing conditions. Report any observed discrepancies. Written instructions will be issued by the Engineer to resolve discrepancies.

G. Because of the small scale of the Drawings, it is not possible to indicate all offsets and fittings or to locate every accessory. Drawings are essentially diagrammatic. Study carefully the sizes and locations of structural members, wall and partition locations, trusses, and rooms dimensions and take actual measurements on the job. Locate material, equipment, and accessories with sufficient space for installing and servicing.

Contractor is responsible for accuracy of his measurements and shall not order materials or perform work without verification. No extra compensation will be allowed because field measurements vary from the dimensions on the Drawings. If field measurements show that equipment or material cannot be fitted, the Engineer shall be consulted. Remove and relocate, without additional compensation, any item that is installed and is later found to encroach on space assigned to another use.

H. Coordinate all equipment being supplied in other divisions to ensure proper electrical connections. Obtain full manufacturer's electrical information and coordinate with electrical system specified. Make adjustments prior to submitting electrical shop drawings. Mark on shop drawings necessary modifications due to equipment being supplied. Contractor shall be responsible for replacement and upgrade of electrical equipment if at time of completion, it is apparent that electrical requirements do not meet the electrical system's supply.

I. Verify all ceiling clearances prior to ordering panelboards and switchboards. Dimensioned drawings are required for all electrical rooms showing actual plan and elevation layouts. Any equipment ordered prior to verifying that it will fit, will be returned at the contractor's expense. Coordinate panelboard and switchboard locations with structural members, beams and column foundations.

J. Coordinate location of electrical equipment with pipes and duct work being supplied by other Divisions. The equipment space including all referenced NEC clearances shall be maintained. If any pipes or duct work violate any electrical clearance requirements, it shall be removed and relocated at the contractor's expense. Drip pans are not permitted unless specifically called for in the construction documents.

K. Guarantee and Service:

1. The Contractor shall guarantee labor, materials and equipment for a period of one (1) year from Substantial Completion, or from Owner's occupancy, whichever is earlier. Contractor shall make good any defects and shall include all necessary adjustments to and replacement of defective items without expense to the Owner.
2. In addition to the manufacturer's guarantee of each item, Contractor shall provide his standard guarantee after final acceptance and make good any defects of materials or workmanship occurring during this period without expense to the Owner.
3. Owner reserves the right to make emergency repairs as required to keep equipment in operation without voiding Contractor's Guarantee Bond nor relieving Contractor of his responsibilities during guarantee period.

1.9 Shop Drawings:

A. Shop drawings, product literature, and other approved submittals will only be reviewed if they are submitted in full accordance with the General and Supplementary Conditions and Division 1 Specification sections and the following:

1. Submittals shall include all applicable items referenced in each specification section, and not include items from more than one specification section in the same submittal.
2. Submittals shall be properly identified by a cover sheet showing the project name, Architect and Engineer names, submittal control numbers, specification section, a list of products or item names with model numbers in the order they appear in the package, and spaces for approved stamps. A sample cover sheet is included at the end of this section.
3. Submittals shall have been reviewed and approved by the General Contractor (or Prime Contractor). Evidence of this review and approval shall be an "Approved" stamp with a signature and date on the cover sheet.
4. Submittals shall be combined into a single submittal package with a table of contents. Submittals shall not be issued as multiple individual submittal packages.
5. Submittals that include a series of fixtures or devices (such as lighting fixtures) shall be organized by the fixture number and be marked accordingly. Each fixture must include all items associated with that fixture regardless of whether or not those items are used on other fixtures.
6. The electrical design shown on the drawings supports the mechanical equipment basis of design specifications at the time of design. If mechanical equipment is submitted with different electrical requirements, it is the responsibility of the mechanical contractor to resolve all required electrical design changes (wire and conduit size, type of disconnect or overload protection, point(s) of connection, etc.) and clearly show the new electrical design on the mechanical submittal with a written statement that this change will be provided at no additional cost. Mechanical submittals made with no written reference to the electrical design will be presumed to work with the electrical design. Any corrections required will be at no additional cost.

B. Before ordering any materials or equipment, and within 30 days after the award of Contract the Contractor shall submit to the Engineer one complete schedule showing the make, type, manufacturer's name and trade designation of all equipment.

1. This schedule shall be accompanied by six (6) copies of the manufacturer's printed specifications and shop drawings for each piece of equipment or specialty and shall give dimensions, diagrams, descriptive literature, capacity or rating, kind of material, finish, guarantee, etc., and such other detailed information as the Engineer may require.
2. When approved, such schedule shall be an addition to these Specifications, and shall be of equal force in that no deviation will be permitted except with the approval of the Engineer.
3. Each shop drawing shall reference the Specification section.
4. The submittal should reference any delivery/scheduling problems with the equipment being supplied.
5. The submittal shall not contain any equipment and/or systems that have not been either listed in the construction documents or provided in an addendum as “approved for bidding”. This formality may be waived by the Engineer, if in his opinion, it is to the Owner’s benefit.

C. If shop drawings show variation from the requirements of the Contract Documents, the Contractor shall make specific mention of such variation in his letter of transmittal. If

acceptable, Contractor will not be relieved of the responsibility for executing the work in accordance with the Contract.

D. Review of shop drawings, descriptive literature, catalog data, or schedules by the Engineer shall not relieve the Contractor from responsibility for deviations from Contract Drawings or Specifications, unless he has in writing called to the attention of the Engineer such deviation at the time of submission, nor shall it relieve him from responsibility for errors of any sort in shop drawings, descriptive literature, catalog data, or schedules. Any feature or function specified but not mentioned in the submittal shall be assumed to be included per the specification.

E. Submit shop drawings and any other drawings specifically called for in other sections. Shop drawings shall consist of plans, sections, elevations, and details to scale (not smaller than 1/4" per foot), with dimensions clearly showing the installation. Direct copies of small-scale project drawings issued to the Contractor are not acceptable. Drawings shall take into account equipment furnished under other Sections and shall show space allotted for it. Include construction details and materials.

F. Submit product data after award of the Contract and before any equipment or materials are purchased. Product data are defined as manufacturer's printed literature specifically marked to indicate size and model and accompanied by rating sheets listing values showing that equipment meets scheduled or specified values. Properly coded stamp from the Engineer on returned submittal is required before ordering equipment.

G. Coordinate with other division's supplying equipment prior to submitting shop drawings.

H. Shop drawings shall be submitted in one package unless approved otherwise by the Engineer. Provide an index of sections, list manufacturers, and "as-specified" or not. Each Specification Section shall be tabbed with equipment inserted.

I. Electrical Room Drawings: A detailed, 1/4"=1'-0" scaled plan view drawing shall be submitted for each electrical room to ensure that the equipment being supplied will fit properly. Include on the drawings any obstruction from building structural or mechanical. Review all duct work and piping shop drawings to ensure proper clearance. Specific grounding requirements shall be noted on the drawings. This includes additional driven grounds and bonding to building steel, water piping, and foundation rebar. This drawing shall make specific mention of any NEC violation. Conduit and/or equipment placement shall take into account any structural or foundation interference. All equipment within the electrical room shall be labeled and actual dimensions shown. The drawings shall be submitted with the shop drawings and manufacturer's product sheets. Failure to supply scaled drawings shall be the basis of rejecting the entire submittal package.

1.10 Test Reports and Verification Submittals: Submit test reports, certifications, and verification letters as called for in other sections. Contractor shall coordinate the required testing and documentation of system performance such that sufficient time exists to prepare the reports, review the reports, and take corrective action within the scheduled contract time.

1.11 O & M Data Submittals: Submit Operations and Maintenance data as called for in other sections. When a copy of approved submittals is included in the O & M Manual, only the final "Furnish and Submitted" or "Furnish as Corrected" copy shall be used. Contractor shall organize these later in the O & M Manuals tabbed by specification number. Prepare O & M Manuals as required by Division 1 and as described herein. [Submit O & M manuals on CD-Rom in addition to required hard bound copies.] Submit manuals at the substantial completion inspection.

PART 2 - PRODUCTS

All materials shall be new and unused, Owner-supplied, or reused as shown on the Drawings, the best of their respective kinds, suitable for the conditions and duties imposed on them. The description, characteristics, and requirements of materials to be used shall be in accordance with qualifying conditions established in the following Sections.

2.1 Equipment and Materials

A. Equipment and materials furnished under this Division shall be the product of a manufacturer regularly engaged in the manufacture of such items for a period of three years. Where practical, all of the components shall be products of a single manufacturer in order to provide proper coordination and responsibility. Where required, Contractor shall furnish proof of installation of similar equipment or materials.

B. Each item of equipment shall bear a nameplate showing the manufacturer's name, trade name, model number, serial number, ratings, and other information necessary to fully identify it. This plate shall be permanently mounted in a prominent location and shall not be concealed, insulated or painted.

C. The label of the approving agency, such as UL or NEMA, by which a standard has been established for the particular item shall be in full view. Materials shall be UL-listed for the application specified or indicated on the Drawings or Specifications.

D. The equipment shall be essentially the standard product of a manufacturer regularly engaged in the production of such equipment and shall be a product of the manufacturer's latest design.

E. A service organization with personnel and spare parts shall be available within two hours for each type of equipment furnished.

F. Install in accordance with manufacturer's recommendations. Place in service by a factory trained representative where required.

G. Materials and equipment are specified herein by a single or by multiple manufacturers to indicate quality, material, and type of construction desired. Manufacturer's products shown on the Drawings have been used as basis for design; it shall be the Contractor's

responsibility to ascertain that alternate manufacturer's products meet detailed specifications and that size and arrangement of equipment are suitable for installation.

H. Model Numbers: Catalog numbers and model numbers indicated in the Drawings and Specifications are used as a guide in the selection of the equipment and are only listed for the Contractor's convenience. The Contractor shall determine the actual model numbers for ordering equipment and materials in accordance with the written description of each item and with the intent of the Drawings and Specifications.

I. All equipment and material shall be manufactured and assembled in the United States.

2.2 Requests for Substitution:

A. Where a particular system, product or material is specified by name, consider it as standard basis for bidding, and base proposal on the particular system, product or material specified. Other systems, products, equipment, or materials may be accepted only if in the opinion of the Engineer, they are equivalent in quality and workmanship and will perform satisfactorily its intended purpose. The Engineer shall approve all such substitutions in materials or equipment in writing. This shall occur prior to bidding.

B. In making requests for substitutions, the Contractor shall list the particular system, product, equipment or material he wishes to substitute and at bid time the Contractor shall state the amount he will add or deduct from his base bid if the substitution is approved by the Engineer. If the Contractor allows no deduction or addition to the base bid for such substitution, it shall be so stated on the request.

C. Requests by Contractor for substitution will be considered only when reasonable, timely, fully documented, and qualifying under one or more of the following circumstances.

1. Required product cannot be supplied in time for compliance with Contract time requirements.
2. Required product is not acceptable to governing authority, or determined to be non-compatible, or cannot be properly coordinated, warranted, or insured, or has other recognized disability as certified by Contractor.
3. Substantial cost advantage is offered Owner after deducting offsetting disadvantages including delays, additional compensation for redesign, investigation, evaluation and other necessary services and similar considerations.

D. All requests for substitution shall contain a "Comparison Schedule" and clearly and specifically indicate any and all differences or omissions between the product specified as the basis of design and the product proposed for substitution. Differences shall include but shall not be limited to data as follows for both the specified and substituted products:

1. Principle of operation.
2. Materials of construction or finishes.
3. Thickness of materials.
4. Weight of item.
5. Deleted features or items.

6. Added features or items.
7. Changes in other work caused by the substitution.
8. Performance and rating data.

If the approved substitution contains differences or omissions not specifically called to the attention of the Engineer, the Owner reserves the right to require equal or similar features to be added to the substituted products at the Contractor's expense.

2.3 Prior Approval: Prior Approval shall be required for any manufacturer other than those listed for all specified items in the Drawings and Specifications. Submit all requests for approval of the alternate manufacturer's products two weeks prior to bid opening. Approval will be in the form of an Addendum to the Specifications and Drawings. Clearly indicate all differences between the specified and proposed product following the guidelines for substitution herein. This requirement may be waived if, in the opinion of the Engineer, it is in the best interest of the Owner. Submittals received after the award of the bid for equipment that has not been Prior Approved is subject to immediate rejection. *Any Engineering time required due to equipment that has not been Prior Approved is subject to billing charged directly to the contractor at the Engineer's current billing rate.*

PART 3 - EXECUTION

3.1 Workmanship: All materials, fixtures, and equipment shall be installed and completed in a first-class workmanlike manner and in accordance with the best modern methods and practice. Any materials installed which do not present an orderly and reasonably neat and/or workmanlike appearance, or do not allow adequate space for maintenance, shall be removed and replaced when so directed by the Engineer.

3.2 Coordination

A. The Contractor shall be responsible for full coordination of the electrical systems with shop drawings of the building construction so the proper openings and sleeves or supports etc., are provided for conduit, devices, or other equipment passing through slabs or walls.

B. Any additional steel supports required for the installation of any electrical equipment, etc., shall br provided by the Contractor.

C. It shall be the Contractor's responsibility to see that all equipment that may require maintenance and operation are made easily accessible, regardless of the diagrammatic location shown on the Drawings.

D. All connections to fixtures and equipment shown on the Drawings shall be considered diagrammatic unless otherwise indicated by a specific detail on the Drawings. The actual connections shall be made to fully suit the requirements of each case and adequately provide for servicing.

E. The Contractor shall protect equipment and fixtures at all times during storage and construction. He shall replace all equipment and fixtures, which are damaged as a result of inadequate protection. Any electrical equipment with electronic components shall be stored off-site in a climate-controlled facility until the building conditions are suitable for installation. Any equipment damaged or compromised by unprotected climate control, in the opinion of the Engineer, shall be replaced at contractor's cost with factory new equipment.

F. Prior to starting and during progress of work, examine work and materials installed by others as they apply to work in this division. Report conditions, which will prevent satisfactory installation.

G. Start of work will be construed as acceptance of suitability of work of others.

H. The Contractor shall review all equipment being supplied by other divisions prior to ordering electrical equipment. Any conflicts between equipment being supplied and the electronic requirements on the drawings shall be corrected and incorporated into the electrical submittals prior to ordering equipment. Installation of the electrical system is the contractor's acceptance of equipment requirements. Any conflict with equipment's electrical requirements after electrical system has been installed shall be the responsibility of the contractor to make corrective action. Any corrective action shall be at the contractor's expense.

3.3 Utilities Coordination: The Contractor shall meet with respective personnel of the telephone, cable TV and electric utilities and review all details of the service and distribution. All details shown on contract documents shall be verified for adequacy and accuracy. The Contractor shall incorporate any required revisions without additional cost to the Owner.

3.4 Construction Electrical Utilities: Provide all temporary wiring for power and light required for construction purposes and remove such temporary wiring when use is no longer required. The contractor shall be responsible to provide all cabinets, meter enclosures and conduit required by the local utility for the permanent electrical service.

3.5 Interruption of Service: Before any equipment is shut down for disconnecting or tie-ins, arrangements shall be made with the Engineer and this work shall be done at the time best suited to the Owner. Outages must be scheduled through the Engineer. The Engineer shall review extent, length, and timing of outages. Services shall be restored the same day. Provide temporary power or other services as required during outages. All overtime or premium costs associated with this work shall be invoiced in the base bid.

3.6 Cutting and Patching: Contractor shall be responsible for cutting and patching of all holes, chases, sleeves, and other openings required for installation of equipment furnished and installed under these Specifications. Obtain permission from Engineer before cutting any structural items.

3.7 Equipment Setting: Bolt equipment directly to concrete pads or foundations, using hot-dipped galvanized anchor bolts, nuts and washers. Level equipment. All floor mounted equipment shall be provided with a housekeeping pad at least 4" in depth.

3.8 Painting: Touch-up factory finishes on equipment located inside and outside shall be done under Division 26. Obtain matched color coatings from the manufacturer and apply as directed by manufacturer. If corrosion is found during inspection on the surface of any equipment, clean, prime, and paint, as required. If corrosion is found to be extensive by the Engineer, the equipment shall be removed and replaced with factory new at the expense of the contractor.

3.9 Clean-up: Thoroughly clean all exposed parts of apparatus and equipment of cement, plaster, and other materials and remove all oil and grease spots. Repaint or touch up as required to look like new. During progress of work, Contractor is to carefully clean and leave premises free from debris and in a safe condition.

3.10 Start-up and Operational Test: Start each item of equipment in strict accordance with the manufacturer's instructions; or where noted under equipment specification, a qualified representative of the manufacturer shall do start-up. Alignment, lubrication, safety, and operating control shall be included in start-up check.

3.11 Record Drawings:

A. During the progress of the work the Contractor shall record on their field set of Drawings the corrections, variations, and deviations for systems which are not installed exactly as shown on the Contract Drawings.

B. Upon completion of the work, record drawings shall be prepared as described in the General Conditions, Supplementary Conditions, and Division 1 Sections.

3.12 Certificate of Occupancy:

Following items are required for issue of Certificate of Occupancy. These shall be provided at or before of Substantial Completion Inspection:

A. Provide certification that asbestos containing products were not used in the project.

B. Fire Alarm Certification. In addition, the documentation shall contain witnessed accounts of the shut-down of electrical and mechanical equipment and the operation of fire doors as required by Code and the Construction Documents.

C. Provide certification that the Intercommunications System is fully operational (If applicable).

D. Provide certification that all emergency lights and exit signs are operational.

E. Provide certification that all selective protective devices have been set according to the coordination study/recommendations including all ground fault selections.

3.13 Acceptance

A. Request inspections as required under the Supplementary or General Conditions. Conceal no work until inspected.

B. Punch List: Submit written confirmation that all punch lists have been checked and the required work completed. The contractor at the Engineer's current billing rate shall pay for additional field time required by the Engineer to report or check on past punch list deficiencies.

C. Instructions: At completion of the work, provide a competent and experienced person who is thoroughly familiar with the project, for a period deemed necessary by the Owner to instruct permanent operating personnel in the operation of equipment and control systems.

D. Operation and Maintenance Manuals: Furnish four complete manuals bound in ring binders and organized by system or section. Manuals shall contain:

1. Detailed operating instructions and instructions for making minor adjustments.
2. Complete wiring and control diagrams.
3. Routine maintenance operations.
4. Manufacturer's catalog data, service instructions, and parts list for each piece of operating equipment.
5. Copies of approved submittals.
6. Copies of all manufacturers' warranties.
7. Copies of test reports and verification submittals.

E. Control Diagrams: Frame under glass and mount on equipment room wall. Include copy in O and M Manuals.

F. Test together and separately to determine that:

1. System is free from short circuits and other faults.
2. Motor starter overload devices are sized correctly.
3. Motors rotate correctly.
4. All equipment operates correctly and as specified.

G. Warranties: Submit copies of all manufacturers' warranties.

H. Record Drawings: Submit "Record Drawings".

I. Install engraved metal or plastic nameplates or tags on controls, panels, switches, starters, timers, and similar operable equipment, keyed by number to operating instructions. Dymo type labels are not acceptable.

J. Acceptance will be on the basis of tests and inspections of the work. A representative of the firm that performed the testing shall be in attendance to assist during inspection. Contractor shall furnish necessary electricians to operate system, make any necessary adjustments and assist with final inspection.

This is a sample cover sheet. Use one for each shop drawing.

PROJECT NAME
PROJECT NUMBER

SAMPLE

ARCHITECT/ENGINEER: Dell Consulting, LLC

CONTRACTOR: XYZ Construction

SUBCONTRACTOR: ABC Electrical Contractor

SUPPLIER: Jones Supply Co.

MANUFACTURER: Various

DATE: 2/12/07

Use whatever standard headings you want here

SECTION: 26 51 00 / Interior Lighting

1. Type A
2. Type B
3. Type C
4. Type D
5. Type E

List each item separately

Typical - list mfr name & model number

General Contractor's APPROVAL stamp must be on this sheet.

END OF SECTION

SECTION 26 00 10

CODES AND STANDARDS

PART 1 - GENERAL

1.1 All work under Division 26 shall be constructed in accordance with the codes and standards listed herein. The design has been based on the requirements of these codes and standards. While it is not the responsibility of the Contractor to verify that all work called for complies with these codes and standards, he shall be responsible for calling to the Engineer's attention any details on the Drawings and/or Specifications that are not in conformance with these or other codes and standards. Current issue of code applies unless specifically noted otherwise.

1.2 Comply with regulations and codes of suppliers of utilities.

1.3 Where no specific method or form of construction is called for in the Contract Documents, the Contractor shall comply with code requirements when carrying out such work.

1.4 Where code conflict exists, generally the most stringent requirement applies.

1.5 Codes or standards applying to a specific part of the work may be included in that section.

PART 2 - CODES AND STANDARDS

2.1 Codes:

A. National Electrical Code (NFPA-70)

B. National Fire Alarm Code (NFPA-72)

C. National Electrical Safety Code (NESC)

D. International Building Code

E. International Existing Building Code

F. International Fire Code

G. ASME 17.1

2.2 Standards:

A. All electrical materials, installation and systems shall meet the requirements of the following standards, including the latest addenda and amendments:

1. American National Standard Institutes (ANSI)
2. Illuminating Engineering Society (IES)
3. Institute of Electrical and Electronics Engineers (IEEE)
4. National Electrical Manufacturer's Associations (NEMA)
5. National Fire Protection Association (NFPA)
6. Occupational Safety and Health Act (OSHA)
7. Underwriter's Laboratories, Inc. (UL)
8. TIA/EIA-568.1-E Commercial Building Telecommunications Infrastructure Standard
9. ANSI/EIA/TIA-569-E Commercial Building Standard for Telecommunications Pathways and Spaces
10. ANSI/EIA/TIA-606-C Administration Standard for the Telecommunications Infrastructure
11. ANSI/J-STD-607-D Generic Telecommunications Bonding and Grounding for Customer Premises
12. BICSI - Telecommunications Distribution Methods Manual (TDMM) – 14th Edition
13. SCTE - Society of Cable Television Engineers
14. ASHRAE Standard 90.1 – 2013

PART 3 - EXECUTION

3.1 Not used.

END OF SECTION

SECTION 26 00 20

WORK REQUIRED FOR EQUIPMENT FURNISHED BY OTHER DIVISIONS

PART 1 - GENERAL

1.1 Related Documents

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

B. Division-26 Basic Electrical Materials and Methods Sections apply to work of this Section.

C. Review all project drawings to be aware of conditions affecting work herein.

PART 2 - PRODUCTS

2.1 Materials for this section are specified in the Section "Basic Materials and Methods."

PART 3 - EXECUTION

3.1 Make connections for the electrical power to equipment furnished and installed in other Divisions.

3.2 Provide raceway boxes, fittings, devices and conductors for the electrical power to equipment furnished and installed in the other Divisions.

3.3 Coordinate wiring and conduit requirements with equipment being furnished prior to rough-in.

3.4 Verify voltage, phase, and current requirements for all equipment being supplied by other divisions. Any modifications shall be incorporated into the electrical submittals with references to any modification and reason. The electrical system is designed around the specified equipment. Any change in the equipment shall be coordinated so that proper electrical protection is obtained. In addition, if the supplied equipment has higher minimum circuit ampacity that the equipment specified, the contractor shall call the modification to the Engineer's attention and make necessary conduit, wire, circuit breaker and equipment changes to accommodate the higher ampacity requirements.

3.5 Any change from the specified equipment requirements shall be the responsibility of the contractor.

3.6 The electrical contractor shall meet with the Division 23 contractor and fully coordinate locations of mechanical equipment, duct work and piping to ensure that proper working clearance as required in the NEC is obtained. Any conflict shall be reported to the Engineer in writing prior to the installation of any of the equipment. Refer to additional requirements for planning drawings.

3.7 Coordinate exact locations and electrical rough-in requirements with other Divisions prior to installation to ensure proper clearances and code requirements are met.

END OF SECTION

SECTION 26 05 00

ELECTRICAL RELATED WORK

PART 1 - GENERAL

1.1 All Division 1 Sections apply to all Division 26 Sections.

1.2 Coordinate for all cutting and patching. Contractor shall review all cutting and patching required prior to bidding and shall coordinate installation.

PART 2 - DIVISION 2 - SITEWORK

2.1 Specific requirements for excavation and backfill for underground conduit are contained in Section 26 05 50.

2.2 The following is part of Division 26 work.

A. Underground electrical utilities.

PART 3 - DIVISION 3 - CONCRETE

3.1 Perform the following as part of Division 26 work, complying with the requirements of Division 3, Concrete.

A. Curbs, foundations, and pads for electrical equipment.

B. Encasement of electrical work.

C. Underground structural concrete to accommodate electrical work.

D. Rough grouting in and around electrical work.

E. Patching concrete cut to accommodate electrical work.

PART 4 - DIVISION 4 - MASONRY

4.1 Refer to Division 4, Masonry for:

A. Patching openings to accommodate electrical work.

PART 5 - DIVISION 5 - METALS

5.1 Refer to Division 5, Metals for:

A. Supports for electrical work.

B. Framing openings for electrical equipment.

PART 6 - DIVISION 6 - WOOD

6.1 Refer to Division 6, Wood for:

A. Supports for electrical work.

B. Framing openings for electrical equipment.

PART 7 - DIVISION 7 - THERMAL & MOISTURE PROTECTION

7.1 Refer to Division 7, Thermal and Moisture Protection for:

A. Installation of all supports for electrical work.

B. Caulking and waterproofing of all wall and roof mounted electrical work.

7.2 Perform the following as part of Division 26 work, complying with Division 7 requirements.

A. Fire barrier penetration seals.

B. Caulking and related shielding around ducts and pipes for sound isolation and attenuation.

PART 8 - DIVISION 8 - DOORS AND WINDOWS

8.1 Refer to Division 8, Doors & Windows for:

A. Installation of all access doors for electrical work.

PART 9 - DIVISION 9 - FINISHES

9.1 Refer to Division 9, Finishes for:

A. Painting exposed conduit and equipment.

B. Painting structural metal and concrete for electrical work.

C. Painting access panels.

9.2 Colors shall be selected by the Architect for all painting of exposed electrical work unless specified herein.

9.3 Perform the following as part of Division 26 work.

A. Touch up painting of factory finishes.

PART 10 - DIVISION 23 - MECHANICAL

10.1 Mechanical Contractor shall furnish to Electrical Contractor all necessary nameplate data, equipment power requirements, wiring diagrams, etc., pertaining to the electrical phase of mechanical installation, as well as all required motors, on/off switches, warning lights, relays, and control devices.

10.2 Contractor shall furnish and install all power wiring, starters and contactors, and make final electrical connections to motors, on/off switches, warning lights, relays, and control devices.

10.3 Disconnect switches for mechanical equipment shall be furnished and installed by the Contractor, unless specifically noted on the Drawings as being furnished as part of mechanical equipment.

10.4 Wiring for controls as indicated on the electrical drawings shall be furnished and installed by the electrical contractor. Control wiring and signal wiring between field installed controls, indicating devices and unit control panels as part of mechanical energy management system shall be provided by Division 23, complying with the requirements of Division 26 specifications.

PART 11 - DIVISION 27 - TELECOMMUNICATIONS

11.1 See “Contractor Coordination and Responsibilities Note” on the Drawings.

END OF SECTION

SECTION 26 05 11

REINFORCED CONCRETE FOUNDATIONS

PART 1 - GENERAL

1.1 Related Documents

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 Summary

A. This Section includes all concrete foundations for electrical equipment.

1.3 Quality Assurance

A. Concrete shall have a minimum 28-day compressive strength of 3,000 psi when cured and tested per ASTM C 31 and C 39. Comply with IEEE C 57.12.91.

PART 2 - PRODUCTS

2.1 Materials

A. Concrete:

1. Concrete shall have a minimum 28-day compressive strength of 3,000 psi when cured and tested per ASTM C 31 and C 39.
2. Concrete shall be placed within 1-1/2 hours after adding cement.
3. Slump range shall be 2 to 4 inches and air entrainment between 3 percent and 6 percent by volume.

B. Reinforcing Steel:

1. Shall be deformed bars conforming to ASTM A 615, Grade 60 sized as shown on the Drawings.
2. Reinforcing steel shall be supported with concrete blocks of the same strength as the concrete mix. Use of broken concrete brick or stone for supporting reinforcing steel shall not be permitted.

C. Expansion Joint Filler:

1. Shall conform to ASTM D 994, 1/2-inch thick.

D. Non-shrink Grout:

1. Non-shrink grout shall conform to the Corps of Engineers Specification for Non-shrink Grout, CRD-C586-78

2. Grout shall be fluid and shall be nonmetallic. Grout shall be nongas-liberating type, cement base, premixed product, requiring only the addition of water for the required consistency. All components shall be inorganic.

E. Forms:

1. Use new plywood for exposed areas, and shiplap or plywood for unexposed areas. Materials shall produce tight forms and an acceptable finish.

F. Form Ties:

1. Form ties shall be constructed so the tie remains embedded in the wall, except for the removable portion at each end.
2. Form ties shall have conical or spherical type inserts. Inserts shall be fixed to remain in contact with forming material, and shall be constructed so that no metal is within one inch of the concrete surface when forms, inserts, and tie ends are removed.
3. Wire ties shall not be used.

G. Anchor Bolts:

1. Unless otherwise indicated on the Drawings, anchor bolts shall have minimum yield strength of 75,000 psi.
2. The thread area plus 6 inches of the bolts shall be hot-dip galvanized. In no case shall less than the top 18 inches of the bolt be galvanized. The remainder of the bolt shall not be galvanized, painted, or coated with oil.

PART 3 - EXECUTION

3.1 Installation

A. Forms:

1. Forms shall be constructed accurately with tight joints to prevent the escape of mortar and to avoid the formation of fins.
2. Brace forms to prevent distortion during concrete placement.

B. Placing Reinforcing Steel:

1. Reinforcing steel shall be placed in accordance with CRSI, Recommended Practice for Placing Reinforcing Bars.
2. Minimum length of splices shall be 18 inches. Splices shall be tied with 18-gauge annealed wire.

C. Placing Concrete:

1. Prior to placing concrete, remove water from excavation and all debris and foreign material from forms.
2. Before depositing new concrete on old concrete, clean surface and pour a 1-inch layer of cement sand grout over the surface of the old concrete.
3. Place concrete in 2 ft. layers without segregation or loss of ingredients and without splashing forms or steel above. Vertical drop to final placement shall not exceed 6 feet.

4. Do not place concrete when ambient temperature is below 40 degrees F or approaching 40 degrees F and dropping.

D. Compaction:

1. Concrete shall be vibrated in place until it becomes uniformly plastic. Vibrators shall penetrate the fresh placed concrete and into the previous layer of concrete below.

E. Concrete Finishing:

1. Screed surfaces to true level planes. After absorption of initial water, float with wood float and trowel with steel trowel to a smooth finish.
2. Do not absorb wet spots with neat cement.
3. Foundation shall not vary from level more than 1/4 inch in 10 feet.

F. Removal of Forms: Forms shall not be removed until the concrete has set sufficiently to carry the dead load and construction load it has to sustain. Forms shall be removed with care to minimize scarring or other surface damage.

G. Finishing Formed Concrete Surface:

1. Cut out honeycombed and defective areas. Cut edges perpendicular to surface at least 1 inch deep, no featheredge shall be allowed. Soak area to be patched for 24 hours. Allow surface to drain free of standing water and patch with non-shrink grout.
2. When forms are removed, remove fins or projections from surface of exposed areas and rub surface with wood float to provide a uniform surface texture.

H. Concrete Protection and Curing: Protect fresh concrete from direct rays of the sun, drying winds, and wash by rain. When forms are removed and finishing completed, cure formed surfaces with curing compound applied in conformance with manufacturer's directions.

I. Concrete Quality Control: Contractor shall furnish certified test reports for the concrete used. Cost of taking, storing, and testing of sample cylinders shall be included in the bid price.

J. Concrete Testing:

1. Three representative cylinders of each batch of concrete shall be taken and tested as follows:
   a. 1 at 7 days
   b. 1 at 28 days
   c. 1 Spare
2. Test cylinders shall be taken at the site of the pour and shall be prepared and cured in a manner similar to the concrete work being done.
3. Cylinders shall be tested by an approved testing laboratory to verify the strength of the concrete.

K. Anchor Bolts: Anchor bolts shall be set level, square, plumb, to the correct elevation, and properly spaced. Anchor bolts shall not be reinforcing bar. After concrete is set, no force shall be applied to anchor bolts in an attempt to move them and correct their

separation. Bolt holes on equipment base plates shall not be reamed or redrilled to fit an improper anchor bolt installation.

END OF SECTION

SECTION 26 05 12

ALTERATIONS AND ADDITIONS TO EXISTING WORK

PART 1 - GENERAL

1.1 The provisions of this Section are in addition to the provisions of Division 1, Building Modifications.

1.2 Building will be occupied by owner during construction.

PART 2 - PERFORMANCE

2.1 General:

A. All necessary additions and alterations to existing work shall be included as required to provide and maintain a complete and proper electrical installation. As necessary, relocate existing electrical work so other trades can pursue their work and maintain building in service, when occupied.

B. The work shall include, but not be limited to, the following:

1. Relocation of fixtures, pull-boxes, electrical ducts, and other similar items, to permit the installation of new equipment.
2. Installation of new conduits, conductors, wiring, and wiring devices, in order to maintain temporary and permanent use of electrical facilities.
3. Disconnection and reconnection of circuits as required for continued operation of services.
4. Provision for the relocation of all mechanical work as required for proper installation of electrical work where not shown or specified in other sections or on other drawings.
5. Repair or replace, as required, any damage due to the installation of the new electrical system in existing areas.

C. Unused, existing, surface mounted work shall be removed and concealed. Outlets shall be blanked off.

D. Existing work to be maintained shall be reconnected and shall have all outlets, boxes and devices accessible after completion of work by other trades.

E. Within NEC limitations, existing conduits may be reused after cleaning.

F. All new work in existing areas shall be exposed on walls in unfinished areas and concealed in finishes in finished areas. Where cutting and patching are required, finishes shall match existing surface finishes. In existing finished areas, all work shall be concealed in new finishes.

G. Consolidate existing and new building ground systems.

H. In general, all new work is intended to be concealed in finishes to be added under this project.

2.2 Existing Building Power Outages:

A. All necessary power outages in existing and in renovated areas shall be at a time approved by Owner in writing and of shortest possible duration. Coordinate details with Engineer, who will assist in determining Owner's requirements, prior to work.

B. Where portions of buildings are altered, and remainder of building continues in operation, temporary wiring shall be provided to maintain all necessary building functions. Provide all equipment, material, labor for a continuous functional system.

2.3 Temporary Wiring for Remodeled Areas:

A. Progress of the work will require temporary wiring installations to utilize a portion of the remodeled area. Wiring may not be the final, permanent installation, and shall be included, as necessary to supply required electrical function.

2.4 Planning for Sequence of the Work:

A. Electrical feeders, branch wiring, signal wiring, and other similar work as shown and specified shall be scheduled to correspond with the sequence of work necessary to demolish, remove and construct new work.

B. Close coordination in scheduling is required between the Owner, Contractor, and other trades to assure a smooth work flow with minimum interference and interruption to building power and communication systems.

2.5 Openings in Existing Work:

A. Provide cutting and patching of existing work as required. Verify exact locations and materials before performing work. Cutting of structural members and bearing walls shall not be done without written approval of the Engineer. Provide access covers were required to meet code requirements.

2.6 Verification of Existing Work:

A. Where shown on the Drawings, work which is "existing" is assumed to be in place and suitable for the necessary alterations and additions required. Contractor shall carefully field check these items and include alterations as may be necessary for proper installation and guarantee.

2.7 Removal and Ownership of Existing Work:

A. Unless noted otherwise, existing electrical work shall be removed. Parts of existing electrical systems that are required to maintain service after the alteration shall remain in service. Unless otherwise specified, all equipment and materials shall remain the property of the Owner except as that judged obsolete or unusable. The Engineer shall provide all final decisions about obsolete or unusable equipment.

B. Property of Owner shall be delivered to a location where directed by the Owner and all other items shall be promptly removed from the job site. The equipment shall be protected during demolition.

2.8 Cutting of Concrete Materials:

A. Holes for materials and supports shall be made with uniform speed rotation drilling equipment which does not provide effects associated with impact type equipment.

B. The use of impact drills, air drills, and the like is not acceptable for this project.

2.9 Maintenance of Existing Lighting Systems and Electric Outlets:

A. Where new lighting layouts are not shown on the Drawings, the existing lighting fixtures and wiring controls shall be reused. If necessary, these items shall be temporarily removed (as light fixtures), if necessary, and shall be reinstalled where removed. New wiring from existing sources shall be provided where remodeling operations require. These items are not shown on the Drawings and shall be site determined by the Contractor.

B. Where existing electrical outlets are located in areas of remodeling, these shall be maintained in service. This work is not shown on the Drawings and shall be site determined by the Contractor.

2.10 Concealed Work: Where required, provide accessed doors to make electrical devices accessible as required by the NEC. If impractical to install access doors, relocate existing electrical work so that access is not required. This shall include, but not limited to, adding additional conduit, pulling new wire, and adding junction boxes.

PART 3 - EXECUTION

3.1 Not used.

END OF SECTION

SECTION 26 05 16

SERVICE ENTRANCE METHODS AND MATERIALS – UNDERGROUND

PART 1 - GENERAL

1.1 Related Documents

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

B. Division-26 Basic Electrical Materials and Methods Sections apply to work of this Section.

C. Review all project drawings to be aware of conditions affecting work herein.

PART 2 - PRODUCTS

2.1 Materials for this section are specified in the Section "Basic Materials and Methods."

PART 3 - EXECUTION

3.1 Installation shall comply with the requirements of the Utilities Company and the applicable paragraphs in Article "3.0 EXECUTION" of the Section "Basic Materials and Methods."

3.2 Comply with NEC 70 - Underground Services.

3.3 Comply with the Section "Excavation and Backfill."

3.4 Provide concrete pads as shown on the Drawings. Coordinate requirements with Utility company. The Utility Company will provide transformer. Confirm adequacy of dimensions and size and number of openings in concrete pad with Utilities Company.

3.5 The Utility Company will furnish and install the current transformers, potential transformer. The contractor shall coordinate the installation of service feeders with the Utility Company so that the current transformers can be installed. The Utility Company will furnish and install the meter. The contractor shall furnish and install CT cabinets, meter cabinets and all associated conduits. Coordinate exact requirements with local utility.

3.6 The electrical contractor shall provide the raceways and service conductors from the reinforced concrete transformer pad to the service equipment as indicated on the Drawings.

3.7 The Electrical Contractor shall provide the raceways from the transformer pad to the meter cabinet. Minimum conduit size is 1" and shall be RGS. Unless otherwise noted, the meter shall be mounted on a 6"x6"x8' concrete post, provided by the contractor. The location of the post shall be approved by the Utility Company.

3.8 Raceways for service conductors shall be schedule 80 PVC or bitumastic coated rigid metal conduit for straight lengths and bitumastic coated rigid metal conduit for any bends of 45 or 90 degrees. Service entrance raceways shall be concrete encased where specifically noted on the Drawings.

3.9 The 45 or 90-degree bends shall have a minimum radius of 36 inches.

3.10 Rigid metal conduit shall receive two undiluted coats of bitumastic free from holidays and pinholes.

3.11 The Electrical Contractor shall provide 200# test poly cord in each spare raceway.

END OF SECTION

SECTION 26 05 26

GROUNDING AND BONDING

PART 1 - GENERAL

1.1 Related Documents

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 Summary

A. This Section includes grounding of electrical systems and equipment. Grounding requirements specified in this Section may be supplemented by special requirements of systems described in other Sections.

1.3 Submittals

A. Product Data: For each type of product indicated.

B. Field Test Reports: Submit written test reports to include the following:

1. Test procedures used.
2. Test results that comply with requirements.
3. Results of failed tests and corrective action taken to achieve test results that comply with requirements.

C. Test Reports and Verification Submittals:

1. Provide ground system drawings per section 3 of this specification.
2. Perform the following field tests and inspections and prepare test reports.
   a. Ground Resistance Test: See Part 3 of this specification.
   b. Patient Care Area Grounding System Test: See Part 3 of this specification.

1.4 Quality Assurance

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

1. Comply with UL 467.

B. Comply with NFPA 70; for overhead-line construction and medium-voltage underground construction, comply with IEEE C2.

C. Comply with NFPA 780 and UL 96 when interconnecting with lightning protection system.

PART 2 - PRODUCTS

2.1 Manufacturers

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Grounding Conductors, Cables, Connectors, and Rods:
   a. Harger Lightning Protection, Inc.
   b. Erico Inc.; Electrical Products Group.
   c. Thermoweld, Inc.

2.2 Grounding Conductors

A. For insulated conductors, comply with Division 26 Section "Conductors and Cables."

B. Material: Copper.

C. Equipment Grounding Conductors: Insulated with green-colored insulation.

D. Grounding Electrode Conductors: Stranded cable.

E. Underground Conductors: Bare, tinned, stranded, unless otherwise indicated.

F. Bare Copper Conductors: Comply with the following:

1. Solid Conductors: ASTM B 3.
2. Assembly of Stranded Conductors: ASTM B 8.
3. Tinned Conductors: ASTM B 33.

G. Grounding Bus: Bare, annealed copper bars of rectangular cross section, with insulators. (Harger HDGBI series)

2.3 Connector Products

A. Comply with IEEE 837 and UL 467; listed for use for specific types, sizes, and combinations of conductors and connected items.

B. Bolted Connectors: Copper or Bronze bolted-pressure-type connectors, or compression type. Do not use below grade.

C. Welded Connectors: Exothermic-welded type, in kit form, and selected per manufacturer's written instructions. For use in below grade applications.

2.4 Grounding Electrodes

A. Ground Rods: Sectional type; copper clad steel.

1. Size: 3/4 by 120 inches (19 by 3000 mm) in diameter.

PART 3 - EXECUTION

3.1 Application

A. In raceways, use insulated equipment grounding conductors.

B. Exothermic-Welded Connections: Use for connections to structural steel and for underground connections.

C. Equipment Grounding Conductor Terminations: Use bolted pressure clamps.

D. Grounding Bus: Install in electrical and telephone equipment rooms, in rooms housing service equipment, and elsewhere as indicated.

1. Use insulated spacer; space 1 inch (25.4 mm) from wall and support from wall 6 inches (150 mm) above finished floor, unless otherwise indicated.
2. At doors, route the bus up to the top of the door frame, across the top of the doorway, and down to the specified height above the floor.
3. Provide UL Listed compression lugs for all ground conductors to be connected to the ground bus.

3.2 Equipment Grounding Conductors

A. Comply with NFPA 70, Article 250, for types, sizes, and quantities of equipment grounding conductors, unless specific types, larger sizes, or more conductors than required by NFPA 70 are indicated. As a minimum, provide a driven ground rod system (as described below), bond to building foundation rebar, building steel, and building water service.

B. Install equipment grounding conductors in all feeders and circuits. Bond all metal conduit to metal enclosures.

C. Bond equipment grounding conductors installed in metallic raceways/conduits to each end of the raceway.

D. Signal and Communication Systems: For telephone, alarm, voice and data, and other communication systems, provide No. 6AWG minimum insulated grounding conductor in raceway from grounding electrode system to each service location, terminal cabinet, wiring closet, and central equipment location.

1. Service and Central Equipment Locations and Wiring Closets: Terminate grounding conductor on a 1/4-by-4by-12-inch grounding bus.
2. Terminal Cabinets: Terminate grounding conductor on cabinet grounding terminal.

E. Poles Supporting Outdoor Lighting Fixtures: Provide a grounding electrode in addition to installing a separate equipment grounding conductor with supply branch-circuit conductors.

F. Common Ground Bonding with Lightning Protection System (where provided): Bond electrical power system ground directly to lightning protection system grounding

conductor at closest point to electrical service grounding electrode. Use bonding conductor sized same as system grounding electrode conductor, and install in conduit.

3.3 Installation

A. Ground Rods: Install at least three rods spaced at least one-rod length from each other and located at least the same distance from other grounding electrodes. Configuration shall be an equilateral triangle. Any deviation from this shape shall be approved by the Engineer in writing.

1. Drive ground rods until tops are 6 inches below finished floor or final grade, unless otherwise indicated.
2. Interconnect ground rods with grounding electrode conductors. Use exothermic welds, and as otherwise indicated. Make connections without exposing steel or damaging copper coating.
3. The total depth/length of each ground rod shall be 30' minimum unless noted otherwise.
4. Provide ground test well at each ground rod location.
5. Ground rods shall be located as close to the main electrical service equipment as possible and shall not be installed under sidewalks, parking areas, or other areas where ground rods cannot be inspected.
6. GPS locate and document location of all ground rods, conductors, and inspection wells.

B. Grounding Conductors: Route along shortest and straightest paths possible, unless otherwise indicated. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage.

C. Bonding Straps and Jumpers: Install so vibration by equipment mounted on vibration isolation hangers and supports is not transmitted to rigidly mounted equipment. Use exothermic-welded connectors for outdoor locations, unless a disconnect-type connection is required; then, use a bolted clamp. Bond straps directly to the basic structure taking care not to penetrate any adjacent parts. Install straps only in locations accessible for maintenance.

D. Metal Water Service Pipe: Provide insulated copper grounding conductors, in conduit, from building's main service equipment, or grounding bus, to main metal water service entrances to building. Connect grounding conductors to main metal water service pipes by grounding clamp connectors. Where a dielectric main water fitting is installed, connect grounding conductor to street side of fitting. Bond metal grounding conductor conduit or sleeve to conductor at each end.

E. Building Foundation: The electrical service, remote buildings and transformers shall be tied to the building foundation. The rebar in the foundation shall be bonded electrically by metal wire. The rebar shall be turned up and extended through the slab by the equipment so the connection can be within sight and be inspected. The rebar shall be coated with protective paint where it penetrates the concrete slab.

F. Water Meter Piping: Use braided-type bonding jumpers to electrically bypass water meters. Connect to pipe with grounding clamp connectors.

G. Bond each above ground portion of gas piping system upstream from equipment shutoff valve.

H. Building Steel: The electrical service, transformers and remote buildings shall be tied to building steel.

3.4 Connections

A. General: Make connections so galvanic action or electrolysis possibility is minimized. Select connectors, connection hardware, conductors, and connection methods so metals in direct contact will be galvanically compatible.

1. Use electroplated or hot-tin-coated materials to ensure high conductivity and to make contact points closer to order of galvanic series.
2. Make connections with clean, bare metal at points of contact.
3. Coat and seal connections having dissimilar metals with inert material to prevent future penetration of moisture to contact surfaces.

B. Exothermic-Welded Connections: Comply with manufacturer's written instructions. Welds that are puffed up or that show convex surfaces indicating improper cleaning are not acceptable. Inspect molds prior to use and discard if deformed.

C. Equipment Grounding Conductor Terminations: For No. 8 AWG and larger, use pressure-type grounding lugs. No. 10 AWG and smaller grounding conductors may be terminated with winged pressure-type connectors.

D. Noncontact Metal Raceway Terminations: If metallic raceways terminate at metal housings without mechanical and electrical connection to housing, terminate each conduit with a grounding bushing. Connect grounding bushings with a bare grounding conductor to grounding bus or terminal in housing. Bond electrically noncontinuous conduits at entrances and exits with grounding bushings and bare grounding conductors, unless otherwise indicated.

E. Tighten screws and bolts for grounding and bonding connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A.

F. Compression-Type Connections: Use hydraulic compression tools to provide correct circumferential pressure for compression connectors. Use tools and dies recommended by connector manufacturer. Provide embossing die code or other standard method to make a visible indication that a connector has been adequately compressed on grounding conductor.

G. Moisture Protection: If insulated grounding conductors are connected to ground rods or grounding buses, insulate entire area of connection and seal against moisture penetration of insulation and cable.

3.5 Field Quality Control

A. Testing: Perform the following field quality-control testing:

1. After installing grounding system but before permanent electrical circuitry has been energized, test for compliance with requirements.
2. Ground Resistance Test
   a. Test completed grounding system at each location where a maximum ground-resistance level is specified, at service disconnect enclosure grounding terminal. Measure ground resistance not less than two full days after the last trace of precipitation, and without the soil being moistened by any means other than natural drainage or seepage and without chemical treatment or other artificial means of reducing natural ground resistance. Perform tests, by the fall-of-potential method according to IEEE 81.
   b. Provide drawings locating each ground rod and ground rod assembly and other grounding electrodes, identify each by letter in alphabetical order, and key to the record of tests and observations. Include the number of rods driven and their depth at each location and include observations of weather and other phenomena that may affect test results. Describe measures taken to improve test results.
      1) Equipment Rated 500 kVA and Less: 10 ohms.
      2) Equipment Rated 500 to 1000 kVA: 5 ohms.
      3) Equipment Rated More Than 1000 kVA: 3 ohms.
      4) Substations and Pad-Mounted Switching Equipment: 5 ohms.
      5) Manhole Grounds: 10 ohms.
      6) Building grounding system: 10 ohms.
   c. Excessive Ground Resistance: If resistance to ground exceeds specified values, notify Engineer promptly and include recommendations to reduce ground resistance.
3. Patient Care Area Grounding System Test per NFPA 99 4.3.3.1, test all conductive surfaces in the patient care areas (except those noted in 4.3.3.1.1.2 and 4.3.3.1.1.3) for voltage and impedance. Submit a test report in chart form identifying all items tested and the results. Any values measured that do not comply with NFPA 99 4.3.3.1 shall be identified, noted, and corrected.

END OF SECTION

SECTION 26 05 30

BASIC ELECTRICAL MATERIALS AND METHODS

PART 1 - GENERAL

1.1 Related Documents

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

B. This Section is a Division-26 Basic Materials and Methods Section and is part of each Division-26 Section making reference to or requiring products specified herein.

C. The requirements of these specifications also apply to Divisions 23, 27, and 28 unless clearly indicated within those Divisions.

1.2 Summary

A. This Section includes the following:

1. Raceways.
2. Building wire and connectors.
3. Supporting devices for electrical components.
4. Concrete equipment bases.
5. Cutting and patching for electrical construction.
6. Touchup painting.

1.3 Definitions

A. EMT: Electrical metallic tubing.

B. FMC: Flexible metal conduit.

C. IMC: Intermediate metal conduit.

D. RGS: Rigid galvanized steel conduit.

E. LFMC: Liquid tight flexible metal conduit.

F. RNC: Rigid nonmetallic conduit.

1.4 Submittals

A. Product Data: Submit the producer's standard descriptive data sheets for each type of product being provided. Mark the data sheet for the product being provided with an identifying mark or arrow. The following shall be submitted:

1. All Conduit.
2. All conduit fittings.
3. Floor Boxes.
4. Surface Metal Raceway.
5. Cabinets.
6. Conduit coating material for underground use.
7. Fire stopping compound (if required by project requirements).
8. Any other special items being supplied on the project.
9. Cable tray, fittings and shop drawings.

1.5 Quality Assurance

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

B. Comply with NFPA 70.

C. All materials and equipment specified herein shall be UL listed or approved according to the requirements of applicable NEC articles.

1.6 Coordination

A. Coordinate chases, slots, inserts, sleeves, and openings with general construction work and arrange in building structure during progress of construction to facilitate the electrical installations that follow.

1. Set inserts and sleeves in poured-in-place concrete, masonry work, and other structural components as they are constructed.

B. Sequence, coordinate, and integrate installing electrical materials and equipment for efficient flow of the Work. Coordinate installing large equipment requiring positioning before closing in the building.

C. Coordinate electrical service connections to components furnished by utility companies.

1. Coordinate installation and connection of exterior underground and overhead utilities and services, including provision for electricity-metering components.
2. Comply with requirements of authorities having jurisdiction and of utility company providing electrical power and other services.

D. Coordinate location of access panels and doors for electrical items that are concealed by finished surfaces. Access doors and panels are specified in Division 8 Section "Access Doors."

E. Coordinate equipment clearance and working space with other equipment, pipes, duct work and obstructions prior to rough in. If clearances are compromised during construction, the contractor shall be required to relocate/modify as required to meet clearance requirements.

1.7 Other Divisions

A. The requirements of these specifications also apply to Divisions 23, 27 and 28 unless clearly indicated on the Drawings.

PART 2 - PRODUCTS

2.1 Manufacturers

A. Manufacturers: Subject to compliance with requirements, provide products by the following:

1. Allied Tube and Conduit;
2. Appleton Electric;
3. Belden Corporation;
4. W.H. Brady Co.;
5. Carlon;
6. Challenger,
7. Crouse-Hinds Co.;
8. ETP;
9. Elcen Metal Products Co.;
10. General Cable Co.;
11. General Electric Co.;
12. Hoffman Engineering Co.;
13. E-Box, Inc;
14. Harvey Hubbell, Inc.;
15. Midland-Ross Corporation;
16. Okonite Co.;
17. 0-Z/Gedney;
18. Raco, Inc.;
19. Republic Steel Corporation;
20. 3M; Southwire;
21. Seton Nameplate;
22. Square D Co.;
23. Thomas and Betts;
24. Triangle PWC, Inc.;
25. Walker Parkersburg Textron;
26. Wiremold Co.
27. Westinghouse.Engine Div.

2.2 Raceways

A. Electrical Metallic Tubing (EMT) Federal Specification WWC-563 and ANSI C80.3: ANSI C80.3, galvanized steel, protected inside and out. Maximum size of EMT shall be 4". Minimum size shall be 1/2" 3/4" unless noted otherwise on the Drawings. EMT shall only be used with cables rated 600 volts or less and in indoor locations not subject to physical abuse.

B. Flexible Metal Conduit (FMC) NEC Article 348: galvanized steel protected inside and out.

C. Intermediate Metal Conduit (IMC) Federal Specification WWC-581: ANSI C80.6, galvanized steel, protected inside and out.

D. Rigid Galvanized Steel Conduit (RGS) NEC Article 344: galvanized steel, protected inside and out.

E. Liquid-tight Flexible Metal Conduit (LFMC) NEC Article 350: galvanized steel protected inside and out with sunlight and water resistant and mineral-oil-resistant extruded plastic jacket.

F. Rigid Non-metallic Conduit (RNC): NEMA TC 2, Schedule 40 or 80 PVC, with NEMA TC3 fittings as indicated on the Drawings.

G. Raceway Fittings: Specifically designed for the raceway type with which used.

1. Electrical Metallic Tubing (EMT): Federal Specification W-F-408, except only material of steel is acceptable. Couplings and connectors shall be concrete and rain tight, with connectors having insulated throats. Use gland and ring compression type couplings and connectors for conduit sizes 2" (50mm) and smaller. Use set screw type couplings with four set screws each for conduit sizes over 2" (50mm). Use set screws of case-hardened steel with hex head and cup point to firmly seat in wall of conduit for positive grounding. Set screw fittings shall be provided with double set screws for each conduit termination (4 set screws total). Indent type connectors or couplings are prohibited. Die-cast or pressure-cast zinc-alloy fittings or fittings made of "pot metal" are prohibited.
2. Flexible Metal Conduit fittings shall be zinc plated steel or cadmium plated malleable iron screw type with insulated throat and angular wedge fitting between convolutions of conduit. Federal Specification A-A-50552 and UL 5.
3. Intermediate Metal Conduit shall have threaded galvanized steel fittings; threadless, compression, galvanized steel fittings or threadless, compression, cadmium plated malleable iron fittings. Fittings shall be rain tight/concrete tight.
4. Rigid Galvanized Steel Conduit shall have threaded fittings, galvanized steel or threadless compression galvanized steel or threadless compression cadmium plated malleable iron. Fittings shall be rain tight/concrete tight.
5. Rigid Non-Metallic Conduit shall have polyvinyl chloride (PVC) fittings suited for the purpose and joined together by a method approved for the purpose. Schedule 80 conduit sections may be joined together with threaded fitting connectors.
6. Liquidtight Flexible Metal Conduit fittings shall be cadmium plated, malleable iron or steel with compression type steel ferrule and neoprene gasket sealing rings, with insulated throat.
7. Wireway fittings shall be steel with rust resistant undercoat and finish coat to match the wireway. The fittings shall be so designed that the sections can be electrically and mechanically fitted together to form a complete system. Dead ends shall be closed.
8. Couplings and Unions shall be galvanized steel, tapered thread standard conduit couplings for intermediate metal conduit and rigid metal conduit. PVC couplings for rigid non-metallic conduit shall use approved adhesive, and threaded

couplings shall be used for schedule 80 conduit. Split couplings shall be galvanized steel. Unions shall be ground joint type galvanized steel.

9. Conduit seals shall be galvanized steel, tapered threads for IMC and RMC with sealing compound and fiber.

H. Bushings: Shall be provided at the end of all conduits prior to pulling cables to protect the insulation of the conductor. Provide grounding bushings for metal raceways, boxes, and cabinets to ensure that all metallic surfaces are effectively grounded. Metallic raceway may be bonded to cabinets, boxes and panelboards by double locknut and bushing to ensure the metallic parts are all effectively grounded. Bushings shall be one of the following types:

1. Zinc plated steel, threaded or threadless
2. Zinc plated steel of threaded or threadless, phenolic insulated with temperature rating of 150 degree C
3. Cadmium plated malleable iron, threaded or threadless
4. Cadmium plated malleable iron, threaded or threadless, phenolic insulated, with temperature rating of 150 degree C
5. Phenolic with temperature rating of 150 degree C
6. Zinc plated steel, or cadmium plated malleable iron; threaded or threadless; non-insulated or insulated with grounding connector or grounding lug.
7. Insulated bushings shall have phenolic insulation molded to the bushing (NEC Article 362).

2.3 Metal Wireways

A. Material and Construction: Shall be sheet metal troughs with hinged or removable covers, rust resistant undercoat and gray finish coat. Sizes shall be as indicated on the Drawings or determined by the Contractor based on NEC requirements according to the number of conductors enclosed. Exterior units shall be weatherproof. Steel shall be minimum 14 gauge.

B. Fittings and Accessories: Include couplings, offsets, elbows, expansion joints, adapters, hold-down straps, end caps, and other fittings to match and mate with wireways as required for complete system.

C. Select features, unless otherwise indicated, as required to complete wiring system and to comply with NFPA 70.

2.4 Surface Metal Raceways (NEC Article 386)

A. Scope: Surface metal raceway system shall be used for branch circuit wiring, fire alarm and other low-voltage wiring in renovated areas where conduit cannot be concealed. The metal raceway system shall consist of raceway, appropriate fittings and device boxes to complete installation per electrical drawings. The areas that are allowed surface metal conduit must be approved by the Engineer.

B. Classification and Use: Surface metal raceway is to be utilized in dry interior locations only as covered in Article 386.10 of the National Electrical Code, as adopted by the National Fire Protection Association and as approved by the American National

Standards Institute. The Wiremold copy V200 and V500 Raceway systems are listed by Underwriter's Laboratories under File Nos. E4376 Guide RJBT and E41751 Guide RJPR.

C. Materials: The Raceway and all system components must be UL Listed. They shall be manufactured of steel; zinc plated, galvanized and/or finished in ivory ScuffCoat (a polyester topcoat over ivory base) and shall be suitable for field repainting to match surroundings.

D. Raceway: The raceway shall be a one-piece design with a base and cover factory assembled. Total width shall be 0.50" by 0.34" deep with a cross sectional area of 0.11 square inch. The raceway shall be available in 5' lengths. The cover shall be a thickness of 0.025", the base a thickness of 0.04".

E. Fittings: A full complement of fittings must be available including but not limited to mounting clips and straps, couplings, flat, internal and external elbows, cover clips, and bushings. The fitting covers shall be painted with an enamel finish, ivory color to match the V200 raceway. They shall overlap the raceway to hide uneven cuts. All fittings shall be supplied with a base where applicable. A transition fitting shall be available to adapt to other raceways manufactured by Wiremold Company.

F. Devices and Fixture Boxes: Devices boxes shall be available for mounting standard devices and faceplates. A device box shall be available in single and multiple gang operations, up to six gang in some cases, by the use of an adaptor fitting. They shall range in depth from 0.94" to 2.75". Extension boxes shall be available to adapt to existing standard flush switch and receptacle boxes. Round fixture and extension shall be available to mount to fixtures and other devices with mounting centers of 1 15/32", 1 5/8", 1 23/32", 1 27/32", 2 ¾", 3 ½", and 4 1/16" diameters by use of an adaptor fitting. Round fixture and extension boxes shall be available in depths ranging from 0.47" to 1.00" and in diameters of 3.0", 4.75", 5.5" and 6.38". All device and fixture box covers shall be painted with an enamel finish, ivory in color to match the raceway cover.

G. Where fill requirements exceed the 40% fill of the V200, the V500 series shall be used.

H. Box fill shall not exceed that allowed by the National Electric Code.

2.5 Surface Nonmetallic Raceways (NEC Article 388)

A. Scope: Surface nonmetallic raceway system shall be used for branch circuit wiring and low-voltage wiring in renovated areas where conduit cannot be concealed. The nonmetallic raceway system shall consist of raceway, appropriate fittings and device boxes to complete installation per electrical drawings. The areas that are allowed surface nonmetallic raceway must be approved by the Engineer.

B. Classification and Use: Surface nonmetallic raceway is to be utilized in dry interior locations only as covered in Article 388.10 of the National Electrical Code, as adopted by the National Fire Protection Association and as approved by the American National Standards Institute. Provide Panduit T70 Surface Raceway System or approved equal.

C. The raceway shall be listed as suitable for use in applications up to 600 volts between conductors by Underwriters Laboratories, Inc. per standard 5A when screw secured and

installed per instructions. The raceway system shall have a full complement of fittings with a 1" minimum bend radius compliant with TIA/EIA-568-B, including:

1. Device brackets and internal junction boxes to support both electrical and communication devices.
2. A divider wall shall be provided for multi-channel raceway segments that contain both line- and low-voltage systems.
3. Faceplates shall be screw mount.

D. Raceway shall be tamper resistant.

E. Materials: The Raceway shall be manufactured of impact-resistant material with a flammability rating of V-0. The raceway shall be pure-color and resist scratches and dents and shall not peel or corrode.

F. Color: Off-White

G. teel; zinc plated, galvanized and/or finished in ivory ScuffCoat (a polyester topcoat over ivory base) and shall be suitable for field repainting to match surroundings.

2.6 Cable Trays

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Cablofil, Inc.
2. Cooper B-Line, Inc.
3. Flex Tray

B. Except as otherwise indicated, provide metal cable trays, of types, classes and sizes indicated with splice hangers and all other necessary accessories. Provide cable trays with rounded edges and smooth surfaces in compliance with applicable standards, and with the following construction features:

1. Spine Type Cable Tray
   a. Materials and finish: Aluminum. Center rails and rungs shall be extruded from Aluminum Association Alloy 6063. All fabricated parts shall be made from Aluminum Association Alloy 5052 and cast parts from Aluminum Association Alloy 319. All hardware and fasteners shall be zinc-plated steel in accordance with ASTM B633.
   b. Cable Trays shall be constructed of a center rail 1.6525"x3.250" with minimum section properties of Sx=0.701 cubic inches and Ix=1.174 inches^4. Rungs shall be a single continuous square tube 0.54"x0.54" with radiuses corners and minimum section properties of Sx=0.019 inches^3 and Ix=0.005 inches^4. Rungs shall be mechanically connected to the center rail in at least two places; symmetrical about the center rail, with ends finished to protect installers and cables. B-Line Data-Track Cent-R-Rail systems or approved equal.
   c. Rungs shall be spaced every 6".
   d. Straight sections shall be supplied in 10' or 12' lengths.
   e. Cable tray widths shall be as indicated on the drawings.

f. Splice hangers must also be capable of acting as the support points for all-thread rod.
g. Cable tray loading depth shall be 6".
h. All splices and connectors must be protect cables from the edges of the center rail and act as a barrier to prevent the center rail from transmitting hazardous gases or smoke; hardware must be installed vertically so as not to interfere with the cables in the cable fill area.
i. Where required, expansion splices shall allow for 1" of thermal expansion and contraction.
j. When required, and to provide an area free of center rails for cable transitions, contractor shall install a universal hub fitting. The universal hub fitting must be a cast aluminum structural member, B-Line CAU Series (flat sheets of steel or aluminum are not acceptable), which can be used with cable ties and allows the center rails to be connected so they may be pivoted at connection points.

2. Basket Type Cable Tray:
   a. Material: Metal, suitable for indoors, and protected against corrosion by electroplated zinc galvanizing, comply with ASTM B 633, Type 1.
   b. Dimensions: 12 inches wide by 4 inches deep minimum. Wire mesh spacing shall not exceed 2 inches by 4 inches.
   c. Supports: Cable tray shall be supported by trapeze style hanging clips on threaded rods on both sides of the tray. Center supports are prohibited. Exception: Cable tray in TRs which shall be supported by wall brackets.
3. Ladder Rack Cable Tray:
   a. Description: 1.5" high tubular side rail cable runway.
   b. Material: Metal, suitable for indoors, and protected against corrosion by factor powder coat, black unless specified otherwise.
   c. Dimensions: 12 inches wide by 1.5 inches deep minimum. Refer to drawings for alternate dimensions. Rung spacing shall be 9 inches on center.
   d. Supports: Ladder rack shall be supported by trapeze style hanging clips on threaded rod on both sides of the tray. Center supports are prohibited. Exception: Ladder rack in TRs which shall be supported by wall brackets.

4. Provide all necessary transitions at 90-degree angles, tees and change of cable tray size so that the cable tray is continuous. The drawings do not reflect these requirements due to the small scale. Transitions shall also be provided at all change of elevations.

C. Loading Capacities and Testing:
   1. Cable tray shall meet the loading requirements of NEMA 12C.
   2. Upon request, manufacturer shall provide test reports in accordance with the latest revision of NEMA VE-1 or CSA C22.2 No. 126-M91.

D. Coordinate installation with other trades to avoid conflicts prior to installation. Install as required to transition around, above, or below other trades work.

E. Shop Drawings: Provide complete shop drawings indicating all cable trays, devices, support points, offsets and transitions. Drawings shall be 1/8" scale. The Engineer will provide base sheets.

2.7 Boxes, Enclosures, And Cabinets

A. Sheet Metal Outlet and Device Boxes: Galvanized, NEMA OS 1. Boxes shall be 4"x 4" x 1-1/2" deep or larger (4" x 4" x 2 1/8" deep or larger for telecommunications and CATV). Use only in flush interior applications or non-finished surface mounted interior applications.

B. Cast-Metal Outlet and Device Boxes: NEMA FB 1, Type FD, with gasketed cover. Use in exterior applications and interior finished surface mounted applications.

C. Floor Boxes: Per details on drawings.

D. Cast-Metal Pull and Junction Boxes: NEMA FB 1, cast aluminum with gasket cover. Use in exterior applications and interior finished surface mounted applications.

E. Hinged-Cover Enclosures: NEMA 250, Type 1, with continuous hinge cover and flush latch.

1. Metal Enclosures: Galvanized steel, finished inside and out with manufacturer's standard enamel.

F. Cabinets: NEMA 250, Type 1, galvanized steel box with removable interior panel and removable front, finished inside and out with manufacturer's standard enamel. Hinged door in front cover with flush latch and concealed hinge. Key latch to match panelboards. Include metal barriers to separate wiring of different systems and voltage and include accessory feet where required for freestanding equipment.

G. Fabricated Boxes shall be steel with inside and outside surfaces coated with corrosion-resistant paint or weather resistant coating. Covers shall be hinged or screwed with or without gaskets depending on location. All exterior boxes shall be rated NEMA 3R. Boxes shall be sized to meet the NEC Article 370-6 fill requirements.

H. Exterior In-Ground Junction Boxes: UL listed, polymer concrete construction, flared-wall, heavy duty cover (15,000 lbs. over a 10" square), open bottom construction. Equivalent to Quazite "PG" syle. Size as required or as indicated on the drawings, whichever is bigger.

2.8 Conductors

A. Conductors, No. 10 AWG and Smaller: 98% conductivity solid or stranded copper.

B. Conductors, No 8 AWG and Larger: 98% conductivity stranded copper.

C. Insulation: THW, THWN or XHHW unless noted otherwise on the Drawings.

D. Low Voltage Cables: Provide plenum rated where required.

E. Wire Connectors and Splices: Connectors for 600-volt conductors Size No. 18 to No. 6 AWG shall be pressure type, spring connectors. Use 600 volt splicer-reducer pressure connectors for copper conductors to 500 KCMIL. Use rectangular, solderless pressure connectors or split bolt-copper alloy connectors for copper conductors to 1000 KCMIL.

F. MC Cable: UL Type MC – meets applicable NEC standards – 600 Volt 90°C (dry) rated. Copper power conductors THHN/THWW -2 insulated singles. Green insulated grounding conductor. UL rated for cable tray and environmental air-handling space installation; 1, 2, and 3-hour through-penetration Fire Wall rated. Aluminum interlocked armor, use steel connectors.

G. Wire Pulling Lubricant shall be a product produced specifically for wire pulling lubrication.

2.9 Supporting Devices

A. Material: Cold-formed steel, with corrosion-resistant coating acceptable to authorities having jurisdiction.

B. Metal Items for Use Outdoors or in Damp Locations: Hot-dip galvanized steel.

C. Slotted-steel channel supports for multiple conduit (trapeze) hangers: Not less than 1-1/2"x1-1/2" (38 mm x 38mm), 12 gage steel, cold formed, lipped channels; with not less than 3/8" (9 mm) diameter steel hanger rods.

1. Channel Thickness: Adjust to suit structural loading of conduit and cables.
2. Fittings and Accessories: Products of the same manufacturer as channel supports.

D. Raceway and Cable Supports: Manufactured clevis hangers, riser clamps, straps, threaded C-clamps with retainers, ceiling trapeze hangers, wall brackets, and spring-steel clamps or click-type hangers.

E. Conduit Straps: All conduit shall be secured with two hole galvanized straps where the following conditions exist:

1. All exterior locations.
2. All interior locations other than mechanical and electrical rooms where the conduit is below 10'. Conduit concealed in wall finishes and ceilings may use single hole strap if allowed by NEC.
3. All other locations not listed above and approved by the NEC may use single hole galvanized straps.
4. Single hole or double hole straps may not be used on direct grade. All conduits on grade shall be mounted to galvanized strut and properly attached and anchored.

F. Pipe Sleeves: ASTM A 53, Type E, Grade A, Schedule 40, galvanized steel, plain ends.

G. Expansion Anchors: Carbon-steel wedge or sleeve type.

H. Toggle Bolts: All-steel springhead type.

2.10 Concrete Bases

A. Concrete Forms and Reinforcement Materials: Shall be provided for all floor mounted electrical equipment including, but not limited to: switchboards, transformers, etc. Concrete bases and structural steel to support this Division's equipment and raceways, and not speci-

fically shown on Structural or Architectural Drawings shall be furnished by the Contractor whose equipment or raceways is to be supported. Provide a raised reinforced 4" concrete base for all floor supported equipment. Equipment installed outdoors on concrete slabs shall be provided with a 4" raised concrete base. Pad shall exceed the equipment's footprint by 4" on all sides. Provide a 1" chamfer on all exposed edges.

B. Concrete: 3000-psi (20.7-MPa), 28-day compressive strength.

2.11 Touchup Paint

A. For Equipment: Equipment manufacturer's paint selected to match installed equipment finish.

B. Galvanized Surfaces: Zinc-rich paint recommended by item manufacturer.

2.12 Equipment Backboards

A. Equipment Backboards shall be exterior grade 3/4" plywood finished on one side. Finish backboard with two coats of fire retardant gray paint before mounting. Exposed side of plywood shall be smooth interior grade. A copper ground bus shall be supplied with each backboard. The ground bus shall be Harger #TGBI14412TMGB or approved equal. The ground bus shall terminate the #6 AWG ground wire provided from the electrical system. Locate equipment backboards where indicated on the Drawings. Install straight and plumb. Secure to structure using screws, toggle bolts or masonry anchors. DO NOT use plastic or wood plugs in masonry or concrete. Do not install combustible backboards in air handling space, plenums or where prohibited by the local governing authority.

2.13 Sleeves: Sleeves shall be galvanized metal flanged type or schedule 40 galvanized steel pipe.

2.14 Concrete Inserts: Concrete inserts shall be galvanized steel, minimum 14 gauge cut to necessary length for the purpose. Use galvanized hardware.

2.15 Pull Wire and Pull Rope:

A. Pullwire shall be galvanized steel wire, No. 14 AWG minimum size.

B. Pullrope shall be ply cord with 2000 lbs. tensile strength, minimum.

2.16 Terminal Strips: Terminal strips shall be sectional barrier type made of molded phenolic for use in wiring control panels. Number of terminals and ampacity shall be as indicated on the Drawings. The binding head shall be screw in type.

PART 3 - EXECUTION

3.1 Electrical Equipment Installation

A. Headroom Maintenance: If mounting heights or other location criteria are not indicated, arrange and install components and equipment to provide the maximum possible headroom. Comply with NEC Requirements.

B. Materials and Components: Install level, plumb, and parallel and perpendicular to other building systems and components, unless otherwise indicated. Materials and equipment shall be installed in a neat and workmanlike manner according to the standards of the industry. Materials and equipment installed and not meeting the standards of the industry may be rejected and required to be removed and reinstalled by the Contractor at no additional cost to the Owner. Minor location changes from those indicated may be necessary so that work can conform with the building as constructed, to fit work of other trades or to comply with the rules of authorities having jurisdiction. Refer to structural drawings for framed openings for raceways, etc., in floors and roofs. Contractor shall be responsible for locating and providing proper dimensions for all required electrical openings.

C. Equipment: Install to facilitate service, maintenance, and repair or replacement of components. Connect for ease of disconnecting, with minimum interference with other installations.

D. Right of Way: Give to raceways and piping systems installed at a required slope.

3.2 Raceway Application

A. Use the following raceways for outdoor installations:

1. Exposed: RGS.
2. Concealed: IMC or RGS.
3. Underground: RGS. Feeders and branch circuit raceways installed below grade equal to and greater than 3/4" may be Schedule 80 PVC, at the contractor's option. If PVC is used underground or below slab, elbows and risers through grade or slab shall be RGS, except as listed below in paragraph 3.4. All exposed raceways penetrating concrete slab shall be rigid metal conduit (no exceptions). Raceways shall not be routed in concrete slabs on grade. Raceways routed in concrete slabs above grade (second floor or above) shall be either RGS, IMC or Schedule 40 PVC. Communication raceways shall be run overhead within the building except for connection to floor boxes. Communication and/or low voltage system raceways that exit from under the building slab shall be metallic (in all cases). Any raceway not meeting this requirement shall be replaced at the contractor's expense. Additional construction time and compensation for the correction of the deficiency will not be allowed.
4. Rigid metal conduit installed underground or in contact with concrete shall be painted with two coats of alkali and acid resistant paint such as bitumastic or equal. Coating shall not be diluted and shall completely cover conduit. Coating for exposed conduits shall not extend more than 4" above finished grade. Coating system shall be approved by the Engineer prior to use/application.

5. Rigid metal conduit installed underground or in contact with concrete shall be fully wrapped UL Listed corrosion resistant tape. Tape wrap shall completely cover the metal conduit and shall extend not more than 4" above finished grade.
6. Connection to Vibrating Equipment: LFMC.
7. Provide sealing fittings to prevent passage of water vapor where conduits pass from warm to cold locations, i.e., refrigerated spaces, constant temperature rooms, air-conditioned spaces, building exterior walls, roofs or similar spaces.
8. Boxes and Enclosures: NEMA 250, Type 3R or Type 4.

B. Use the following raceways for indoor installations:

1. Exposed: RGS or IMC, except EMT is acceptable in mechanical and electrical rooms above 6' AFF. Conduit may be exposed in equipment rooms, vertical chases, mechanical and electrical rooms, other similar spaces not normally habitable or exposed to public view, and where electrical drawings specifically note "exposed conduit."
2. Concealed: EMT.
3. MC Cable: Shall only be used on short runs from junction box above ceiling to oulet boxes in the ceiling (for light fixtures), and walls (for receptacles and switches, etc.) of the same space or room. EMT or other approved raceway shall be run from this junction box to the serving circuit breaker. MC Cable shall not extend from one space or room to another.
4. Connection to Mechanical, Plumbing and Fire Protection Equipment: LFMC; exceptions: controls not mounted on equipment, which shall comply with Section B above; and smaller air handling units such as variable air volume units and air terminal units mounted above ceilings outside mechanical rooms which shall be FMC.
5. Connection to Vibrating Equipment: FMC; except in wet or damp locations and as listed in B.4, use LFMC.
6. Damp or Wet Locations: IMC or RGS.
7. Boxes and Enclosures: NEMA 250, Type 1, unless otherwise indicated.
8. Rigid non-metallic conduit where used for risers in concealed areas, shall transition to metallic conduit at the first junction box, but in no case shall it extend higher than 7' within the space.

C. Use the following raceways for hazardous installations:

1. Raceways in hazardous (classified) areas shall be RGS.
2. Install UL approved sealing fittings that prevent passage of explosive vapors, in hazardous areas equipped with explosive proof lighting fixtures, switches, and receptacles as required by the NEC.
3. All devices and junction boxes shall be rated for the classified areas.

3.3 Raceway And Cable Installation

A. Conceal raceways and cables, unless otherwise indicated, within finished walls, ceilings, and floors.

B. Install raceways and cables at least 6 inches (150 mm) away from parallel runs of flues and steam or hot-water pipes. Locate horizontal raceway runs above water and steam piping.

C. Refer to structural drawings for framed openings for raceways, etc., in floors and roofs. Contractor shall be responsible for locating and providing proper dimensions for all required electrical openings. Review structural steel shop drawings and coordinate location of equipment with structural elements to ensure proper clearance and headroom.

D. Layout and install raceways with sufficient clearance to permit proper installation.

E. Install raceways straight and plumb. Squarely cut conduit and properly ream to remove all constriction and burrs before making up joints. Paint exposed threads to retard rusting. Bending of conduit with a pipe tee or vise is prohibited.

F. Conductors shall not be installed until conduit system is complete. Bending radius of insulated wire or cable shall not be less than the minimum recommended by wire or cable manufacturer. Maximum pulling tension of any wire or cable shall not exceed manufacturer's recommended values. Do not injure insulation while installing wire in conduits.

G. Use temporary raceway caps to prevent foreign matter from entering. During construction, after the building has been dried in and prior to any wire being pulled, all conduit shall be cleaned so that it is free of foreign material and water.

H. Provide an equipment grounding conductor which shall be separate from the electrical system neutral conductor. See corresponding specification section.

I. Make conduit bends and offsets so inside diameter is not reduced. Keep legs of bends in the same plane and straight legs of offsets parallel, unless otherwise indicated.

J. Make bends in exposed parallel or banked runs from the same centerline.

K. Use raceway and cable fittings compatible with raceways and cables and suitable for use and location.

L. For slabs located above grade in multistory buildings (second floor and above), embed raceways in slabs in middle third of slab thickness where practical, and leave at least 1-inch (25-mm) concrete cover.

1. Secure raceways to reinforcing rods to prevent sagging or shifting during concrete placement.
2. Space raceways laterally to prevent voids in concrete.
3. Install conduit larger than 1-inch trade size (DN27) parallel to or at right angles to main reinforcement. Where conduit is at right angles to reinforcement, place conduit close to slab support.
4. Transition from nonmetallic tubing to Schedule 80 nonmetallic conduit or rigid steel conduit before rising above floor.
5. Make bends in exposed parallel or banked runs from same centerline to make bends parallel. Use factory elbows only where elbows can be installed parallel; otherwise, provide field bends for exposed parallel raceways.

M. For slabs on grade level, conduit shall be buried below grade by a minimum of 12". Conduits may not be installed in grade level slabs.

N. Install pull wires in empty raceways. Use No. 14 AWG zinc-coated steel or monofilament plastic line with not less than 200-lb (90-kg) tensile strength. Leave at least 12 inches (300 mm) of slack at each end of the pull wire.

O. Connect motors and equipment subject to vibration, noise transmission, or movement with a maximum of 72-inch (1830-mm) flexible conduit. Install LFMC in wet or damp locations. Install separate ground conductor across flexible connections.

P. Set floor boxes level and trim after installation to fit flush to finished floor surface. Seal box to prevent entrance of moisture or dirt.

Q. Boxes: Attach boxes to concrete formwork, or to other surrounding building material. Provide additional junction and pull boxes where injury to insulation or deformation of wire would occur due to excessive pulling resistance. When several feeders pass through a common pull box, tag each feeder separately, indicating electrical characteristics and destination.

1. Boxes shall be accurately located. Consult Architectural plans for dimensions.
2. Mount boxes in the course nearest to the height specified when installed in finished block, brick or tile walls.
3. Boxes for use with raceway systems shall be minimum 1 1/2 inches deep, except where shallower boxes required by structural conditions are approved. Boxes for other than lighting fixture outlets shall be minimum 4 inches square, except 4-by-2 inch boxes may be used where only one raceway enters outlet.
4. Pull boxes shall be at least the minimum size required by NFPA 70 and of code-gauge galvanized sheet steel, or compatible with nonmetallic raceway systems, except where cast-metal boxes are required in locations specified herein. Furnish boxes with screw-fastened covers. Where several feeders pass through a common pull box, tag feeders to indicate clearly electrical characteristics, circuit number, and panel designation.
5. Extension rings shall not be used in new construction. Size all boxes according to fill. Any extension rings found shall be removed at the contractor's expense, unless specifically approved by the Engineer.
6. Recessed Installation: Boxes and covers shall be installed so that the covers are flush with the finished surfaces. Boxes in masonry or tile construction shall have masonry boxes or boxes with square cut tile covers. Do not cut concrete block through its entirety in order to accommodate any type box. "Handy" boxes shall not be used.
7. Boxes in Partitions: Through type boxes are not permitted except where shown on electrical drawings. Recessed outlet boxes, cabinets, consoles, etc., when shown located back-to-back shall be provided with 1/2" fiberglass insulation between the boxes.
8. Verify box/enclosure placement in rated assemblies and comply with UL spacing/opening requirements. Fire stop as required.

R. For all conduits entering junction boxes in interior spaces, seal spare conduits with approved conduit plugs. Seal conduits containing fiber-optic communications cable with conduit sealer.

S. Surface raceway and fittings:

1. Prior to and during installation, refer to manufacturer's layout drawings indicating all elements of the system. Contractor shall comply with detailed manufacturer's instruction sheets which accompany system components as well as complete system instruction sheets, whichever is applicable.
2. Mechanical Security. All raceway systems shall be mechanically continuous and connected to all electrical outlets, boxes, cabinets, in accordance with manufacturer's installation sheets.
3. Electrical Security. All metal raceway shall be electrically continuous and bonded in accordance with the National Electrical Code for proper grounding.
4. Raceway Support. Raceway shall be securely supported at intervals not exceeding 10 feet or in accordance with manufacturer's installation sheets.
5. Completeness. All systems shall be installed complete, including bushings and inserts where required by manufacturer's installation sheets. All unused raceway openings shall be closed.
6. Install in dry locations only. It shall be used in all renovated areas where raceway is exposed. Exception: mechanical, electrical, janitor, and storage areas. EMT shall not be used in exposed finished areas.

T. Wet or Damp Locations:

1. Use rigid steel or IMC unless noted otherwise.
2. Provide sealing fittings, to prevent passage of water vapor, where conduits pass from warm to cold locations, i.e., (refrigerated spaces, constant temperature rooms, air-conditioned spaces building exterior walls, roofs) or similar spaces.
3. Use rigid steel or IMC conduit within five feet of the exterior and below concrete building slabs in contact with soil, gravel, or vapor barriers. Cover conduit on the outside with factory coating of 20 mil bonded PVC or field coat with asphaltum before installation. After installation, completely coat damaged areas of coating.
4. Wireways and fittings shall be used for exposed work and when installed outdoors or in wet locations shall be approved weatherproof construction.

U. Bushings shall be provided at the end of all conduits to protect the insulation of the conductor. Provide grounding bushings for metal raceways, boxes, and cabinets to insure that all metallic surfaces are effectively grounded. Metallic raceway may be bonded to cabinets, boxes and panelboards by double locknut and bushing to ensure the metallic parts are all effectively grounded.

V. Install pull boxes in conduit at intervals of 200 feet or less except when these intervals will place the pull box cover in a finished floor area or non-accessible place, the interval may be extended to a maximum distance of 300 feet. Request for each deviation or extension of interval shall be made and approval granted by the Engineer before proceeding with the installation. <u>If any conduit run is found to be greater than 300 feet and the contractor has not secured prior approval from the engineer, a new raceway shall be installed to replace the deficient one at the contractor's expense.</u>

W. Conduit Installed in Concrete:

1. Conform to applicable portion of Section 703 of ACI Standard Code for reinforced concrete.

2. Conduit: Rigid Steel, IMC or EMT; except do not install EMT in concrete slabs that are in contact with soil, gravel or vapor barriers.
3. Align and run conduit in direct lines.
4. Locate conduits in center third of concrete slab thickness. Outside conduit diameter not to exceed 1/3 concrete slab thickness. Install no conduit in concrete slabs of less than 3" thick.
5. Conduits in concrete slabs shall not cross at an angle of less than 45 degrees.
6. Conduits shall not pass through beams except when shown on the Drawings.
7. Space vertical installation of conduit through concrete slabs not closer than three diameters on center.
8. Space between conduit in slabs not closer than six diameters apart, except one conduit diameter at conduit crossings.
9. Where conduits rise through floor slabs, curved portion of bends shall not be visible above finish floor.

3.4 Special PVC Requirements

A. Floor Penetrations:

1. Rigid metallic conduit for all exposed conduits, regardless of size and concealed conduits greater than 1 ½". Schedule 40 PVC for conduits less than 1 ½" concealed in walls. All conduit concealed by floor mounted equipment may be schedule 40 PVC (if less than 1 ½" and less than 50 feet and length) or rigid metallic conduit (if 1 ½" or greater and greater than 50 feet in length). Concealed PVC conduit (less than 1 ½") shall transition to metal conduit as soon as practical above slab.

B. Bends:

1. Conduits less than 1 ½": Conduit elbows may be either rigid non-metallic or non-corrosive rigid metallic conduit. In circuit runs exceeding 50', all bends shall be non-corrosive rigid metallic conduit. Bends may be factory or field fabricated using manufacturer approved heat boxes. Field fabricated bends using blowtorch are not acceptable.
2. Conduits 1 ½" and larger: Conduit elbows shall be rigid non-corrosive metallic conduit only, unless specifically allowed otherwise by the Engineer. Schedule 40 PVC elbows shall not be used.
3. A cable pulling plan may be requested by the Engineer on long pulls.
4. The Engineer may allow special provisions for the installation of PVC elbows.

C. Minimum Size:

1. Minimum size of PVC conduit to be installed below slab shall be 3/4".

D. Jointing:

1. Pipe and fittings shall be cement welded or threaded (only for Schedule 80 conduit) and made watertight. All joints shall be cleaned with solvent or sanded smooth prior to application of cement.

3.5 Raceway Methods For Voice, Data And CATV

A. A conduit shall be a home run overhead from each data outlet and each CATV outlet to the serving communications room. Each conduit shall serve one CO outlet only. Conduit shall be 1" trade size for data outlets and 1" trade size for CATV outlets. Total conduit length to each data outlet shall not exceed 280'.

B. J-hook: A conduit shall be stubbed up above ceiling from each data outlet and each CATV outlet to an accessible ceiling space. Each conduit shall serve one CO outlet only. Conduit shall be 1" trade size for data outlets and 1" trade size for CATV outlets. Cables will then be J-hooked to serving telecommunications room.

1. J-hooks shall be independently supported from the building structure. Supporting J-hooks from piping, ductwork, ceiling hangers, etc. shall not be permitted.

C. Cable tray: A conduit shall be stubbed up above ceiling from each data outlet and each CATV outlet to the nearest cable tray. Each conduit shall serve one CO outlet only. Conduit shall be 1" trade size for data outlets and 1" trade size for CATV outlets. Conduit shall terminate at cable tray.

D. Conduit bodies such as 'LB' fittings are not allowable.

E. Pull boxes for 1" data conduits and ¾" CATV conduits shall be 4" wide x 4" long x 2-1/8" deep NEMA 1 galvanized steel with screw cover. Where 1" data or ¾" CATV conduits are tightly racked with uniform spacing, wider pull boxes may be provided to serve multiple conduits. Terminate conduits at opposite ends of pullboxes. Do not terminate conduits at right angles to each other except as specifically indicated.

F. Provide pullboxes for each run of conduit at every 100 feet on center and at each end of conduit runs containing a total of two 90 deg bends or a combination of lesser bends totaling 180 deg (minimum requirements - provide whether specifically indicated or not). Conduit runs containing more than two 90 deg bend without a pullbox are not acceptable. Factory conduit elbows and all other bends shall have a minimum radius of six times the internal conduit diameter. Conduit offsets and pullboxes required to suit field conditions and to conform to these requirements shall be provided at no additional cost to the owner.

G. Conduits that extend outside the building shall be metallic, no exceptions.

H. For existing facilities: NEMA 3R metallic enclosures shall be provided where the conduit exits the building. The box shall be sided to terminate all circuits and provide proper TVSS and grounding. A separate driven ¾" by 20' ground rod shall be driven at each junction box location. Grounding shall also be bonded to the building electrical ground. Metallic conduit shall be properly bonded to the metallic junction box.

3.6 Wiring Methods For Power, Lighting, And Control Circuits

A. Feeders: Type THHN/THWN insulated conductors in raceway.

B. Underground Feeders and Branch Circuits: Type THWN insulated conductors in raceway.

C. Branch Circuits: Type THHN/THWN insulated conductors in raceway.

D. Remote-Control Signaling and Power-Limited Circuits: Type THHN/THWN insulated conductors in raceway for Classes 1, 2, and 3, unless otherwise indicated.

E. Except for control wiring, the minimum size of wire shall be No. 12 AWG.

F. For all lighting and power receptacle circuits (20 ampere), the minimum wire size is #12 AWG. The total distance for the travelers on three-way circuits shall calculated and distance limitations applied. Wire sizes that are installed and do not meet the size/distance criteria, shall be removed and replaced at the contractor's expense. The larger wire size applies to the home run. Minimum wire size for 120V and 277V, 20 ampere circuits to limit voltage drop to 3% or less is as follows:

1. Less than 50' - #12 AWG (120V).
2. Circuits greater than 50' but less than 100' - #10 AWG (120V).
3. Circuits greater than 100' but less than 150' - #8 AWG (120V).
4. Circuits greater than 150' but less than 270' - #6 AWG (120V).
5. Circuits greater than 270' but less than 420' - #4 AWG (120V).
6. Less than 150' - #12 AWG (277V).
7. Circuits greater than 150' but less than 240' - #10 AWG (277V).
8. Circuits greater than 240' but less than 400' - #8 AWG (277V).
9. Circuits greater than 400' but less than 620' - #6 AWG (277V).
10. Circuits greater than 620' but less than 950' - #4 AWG (277V).

3.7 Wiring Installation

A. General: Conductors shall not be installed until conduit system is complete. Bending radius of insulated wire or cable shall not be less than the minimum recommended by wire or cable manufacturer. Maximum pulling tension of any wire or cable shall not exceed manufacturer's recommended values. Do not injure insulation while installing wire in conduits.

B. Install splices and taps that are compatible with conductor material and that possess equivalent or better mechanical strength and insulation ratings than unspliced conductors.

1. Splices: Splices shall be permitted in junction boxes, outlet boxes of other permanently accessible locations. Conductors No. 6 or smaller shall be spliced with devices approved by Underwriters Laboratories, Inc., as splicing connectors. Splices in conductors larger than No. 6 shall be accomplished with devices approved by Underwriters Laboratories as pressure cable connectors.
2. Splices made in underground boxes or wet locations shall be made with commercial, UL approved cast resin splicing kit (120 volt circuits or greater). Splices for low voltage circuits may not be made below grade or in wet/damp locations.

C. Wire Pulling Lubrication: Shall be used when any wire is pulled by mechanical means. Wire and cable shall be carefully handled during installation. Soap flakes or vegetable soaps shall not be used for lubrication.

D. Install wiring at outlets with at least 12 inches (300 mm) of slack conductor at each outlet.

E. Connect outlet and component connections to wiring systems and to ground. Tighten electrical connectors and terminals, according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A and UL 468B.

F. Provide dedicated neutrals for all 120V and 277V circuits.

G. Conductors in Parallel: Conductors connected in parallel (electrically joined at both ends to form a single conductor) shall be of the same length, of the same conductor material, the same circular-mil area, the same insulation types and terminate in the same manner. Where installed in separate raceways or cables, the raceways or cables shall have the same physical characteristics.

H. Wiring in switchboards, panelboards, junction cabinets, etc., shall be neatly formed to present a neat and orderly appearance.

I. Interconnections of control wiring shall be on identified numbered terminal strips.

3.8 Expansion Joints

A. Conduits three inches and larger that are secured to the building structure on opposite sides of a building expansion joint, require expansion and deflection couplings. Install couplings in accordance with the manufacturers' recommendations.

B. Provide conduits smaller than three inches with junction boxes on both sides of the expansion joint. Connect conduits to junction boxes with sufficient slack of flexible conduit to produce 5" vertical drop midway between end. Flexible conduit shall have a green copper ground-bonding jumper installed. In lieu of this flexible conduit, expansion and deflection couplings as specified above for three inches and larger conduits are acceptable.

C. Expansion fittings shall be provided for raceways to compensate for thermal expansion and contraction in conduit runs 200 feet or greater and at building expansion joints. Bonding jumpers shall be provided for electrical continuity of the raceway system at the expansion fittings.

3.9 Caulking And Seals:

A. Where conduits, wireways, and other electrical raceways pass through fire partitions, fire walls, smoke partitions, or floors, install a fire stop that provides an effective barrier against the spread of fire, smoke and gases. Fire stop shall be rock wool fiber, silicone foam sealant or approved equal. Completely fill and seal clearances between raceways and openings with the fire stop material. Adhere to manufacturer's installation instructions.

B. At floor, exterior wall, and roof conduit penetrations, completely seal clearances around the conduit and make watertight.

3.10 Electrical Supporting Device Application

A. Damp Locations and Outdoors: Hot-dip galvanized materials.

B. Dry Locations: Steel materials.

C. Support Clamps for PVC Raceways: Click-type clamp system.

D. Selection of Supports: Comply with manufacturer's written instructions.

E. Strength of Supports: Adequate to carry present and future loads, times a safety factor of at least four; minimum of 200-lb (90-kg) design load.

3.11 Support Installation

A. Install support devices to securely and permanently fasten and support electrical components.

B. Support no electrical work from piping, ductwork, etc. Where metal decking is used, provide supports independent of decking so that loads will not be transferred to decking. Drill through decking and secure supports to concrete slab.

C. Conduit through Slab Supports: Conduit supports for conduits routed from below grade up through concrete slabs shall be solid, metallic type. Metallic conduit shall not be used to support conduits through slab. After concrete slab has been poured and set, supports shall be cut flush with slab.

D. Support conduit within one foot of changes of direction, and within one foot of each enclosure to which it is connected.

E. Electrical devices in lay-in and gypsum board ceilings: Coordinate location of electrical outlets with architectural features of the building and with the equipment of other trades. Boxes or devices mounted between bar joists or "T" bars shall be supported from two bars or joists. Devices and associated boxes shall not be supported by the lay-in tiles.

F. Install individual and multiple raceway hangers and riser clamps to support raceways. Provide U-bolts, clamps, attachments, and other hardware necessary for hanger assemblies and for securing hanger rods and conduits.

G. Support parallel runs of horizontal raceways together on trapeze- or bracket-type hangers.

H. Size supports for multiple raceway installations so capacity can be increased by a 25 percent minimum in the future.

I. Support individual horizontal raceways with separate, malleable-iron pipe hangers or clamps.

J. Install 1/4-inch- (6-mm-) diameter or larger threaded steel hanger rods, unless otherwise indicated.

K. Spring-steel fasteners specifically designed for supporting single conduits or tubing may be used instead of malleable-iron hangers for 1-1/2-inch (38-mm) and smaller raceways serving lighting and receptacle branch circuits above suspended ceilings and for fastening raceways to slotted channel and angle supports.

L. Arrange supports in vertical runs so the weight of raceways and enclosed conductors is carried entirely by raceway supports, with no weight load on raceway terminals. Vertical conduit inside building shall be supported at each floor level and at 10'0" intervals. Simultaneously install vertical conductor supports with conductors.

M. Separately support cast boxes that are threaded to raceways and used for fixture support. Support sheet-metal boxes directly from the building structure or by bar hangers. If bar hangers are used, attach bar to raceways on opposite sides of the box and support the raceway with an approved fastener not more than 24 inches (610 mm) from the box.

N. Install metal channel racks for mounting cabinets, panelboards, disconnect switches, control enclosures, pull and junction boxes, transformers, and other devices unless components are mounted directly to structural elements of adequate strength.

O. Install sleeves for cable and raceway penetrations of concrete slabs and walls unless core-drilled holes are used. Install sleeves for cable and raceway penetrations of masonry and fire-rated gypsum walls and of all other fire-rated floor and wall assemblies. Install sleeves during erection of concrete and masonry walls.

P. Securely fasten electrical items and their supports to the building structure, unless otherwise indicated. Perform fastening according to the following unless other fastening methods are indicated:

1. Wood: Fasten with wood screws or screw-type nails.
2. Masonry: Toggle bolts on hollow masonry units and expansion bolts on solid masonry units.
3. New Concrete: Concrete inserts with machine screws and bolts.
4. Existing Concrete: Expansion bolts.
5. Steel: Welded threaded studs or spring-tension clamps on steel.
   a. Field Welding: Comply with AWS D1.1.
6. Welding to steel structure may be used only for threaded studs, not for conduits, pipe straps, or other items.
7. Light Steel: Sheet-metal screws.
8. Fasteners: Select so the load applied to each fastener does not exceed 25 percent of its proof-test load.

Q. Equipment Supports: Concrete bases and structural steel to support this Division's equipment and raceways, and not specifically shown on Structural or Architectural Drawings shall be furnished by Contractor whose equipment or raceways is to be supported. Provide a raised reinforced 4" concrete base for all floor supported equipment. Equipment installed outdoors on concrete slabs shall be provided with a 4" raised concrete base. If equipment is being installed on grade, concrete base shall be provided that will allow a minimum of 3" above finished grade and sod.

3.12 Firestopping

A. Apply firestopping to cable and raceway penetrations of fire-rated floor and wall assemblies to achieve fire-resistance rating of the assembly. Comply with UL assembly rating requirements.

B. Space junction boxes, receptacles and panels installed in rated assemblies to comply with UL listings. Verify prior to installation.

C. Cracks, voids, or holes up to 4" diameter shall be filled with putty, caulking, or one-piece intumescent elastomer which is non-corrosive to metal, compatible with synthetic cable jackets, and capable of expanding 10 times when exposed to flame or heat.

D. For openings 4" or greater use a sealing system capable of passing 3-hour fire test in accordance with ASTM E-814. Sealing system shall consist of wall wrap or liner, partitions, and end caps capable of expanding when exposed to temperatures of 250 to 350°F.

3.13 Concrete Bases

A. Construct concrete bases of dimensions indicated, but not less than 4 inches (100 mm) larger, in both directions, than supported unit. Follow supported equipment manufacturer's anchorage recommendations and setting templates for anchor-bolt and tie locations, unless otherwise indicated. Use 3000-psi (20.7-MPa), 28-day compressive-strength concrete and reinforcement.

3.14 Cutting And Patching

A. Cut, channel, chase, and drill floors, walls, partitions, ceilings, and other surfaces required to permit electrical installations. Perform cutting by skilled mechanics of trades involved.

B. Repair and refinish disturbed finish materials and other surfaces to match adjacent undisturbed surfaces. Install new fireproofing where existing firestopping has been disturbed. Repair and refinish materials and other surfaces by skilled mechanics of trades involved.

C. Sleeves Through Roof: Coordinate setting with Division 7. Contractor setting sleeves for his electrical conduit is responsible for filling sleeve pockets with roof bitumen and insuring there is no moisture leakage during roof guarantee period.

3.15 Field Quality Control

A. Inspect installed components for damage and faulty work, including the following:

1. Raceways.
2. Building wire and connectors.
3. Supporting devices for electrical components.
4. Electrical identification.
5. Concrete bases.
6. Cutting and patching for electrical construction.

7. Touchup painting.

3.16 Refinishing And Touchup Painting

A. Refinish and touch up paint as follows. Paint materials and application requirements are specified in Division 9 Section "Painting."

1. Clean damaged and disturbed areas and apply primer, intermediate, and finish coats to suit the degree of damage at each location.
2. Follow paint manufacturer's written instructions for surface preparation and for timing and application of successive coats.
3. Repair damage to galvanized finishes with zinc-rich paint recommended by manufacturer.
4. Repair damage to PVC or paint finishes with matching touchup coating recommended by manufacturer.
5. Finishes in areas not listed or otherwise noted shall be black enamel.
6. Hangers, supports, structural steel and equipment that are not factory finished shall be prime coated and finished coated with color to match the area in which it will be located.
7. Electric cabinets, switchboards, panelboards and equipment that is factory finished and has damaged finish shall be touched up to match the factory finish.
8. All surfaces that are to be painted shall be free of rust, scale, oil and grease before prime coat is applied.
9. Paint all junction boxes and conduit as described herein.

3.17 Grounding

A. Ground and bond in accordance with NEC Article 250 and other applicable articles.

B. Provide an equipment grounding conductor which shall be separate from the electrical system neutral conductor. The equipment grounding conductor shall be colored green. It shall be continuous from a connection at the Service Entrance Equipment Ground to all switchboards, distribution and branch panelboards. Equipment grounding conductors shall be provided in all branch circuits serving convenience outlets, receptacles, portable and permanently installed electrical appliances, equipment apparatus and other miscellaneous metal enclosing bodies including light switch boxes normally within contact of personnel. Branch circuit grounding conductors shall be sized in accordance with the National Electrical Code. Connections at panelboards, outlets, equipment and apparatus shall be made in an approved and permanent manner. Resistance to ground shall not exceed 15 ohms.

C. Bond bushings of the raceway system to ground lugs in boxes, cabinets, motors and equipment to assure electrical continuity of all metallic components of the electrical systems. Comply with the requirements of NEC Articles 250D, 250E, 250F, 250G, 250J and 250K. Where equipment is not provided with a grounding lug, provide ground lugs suitable for wire being installed.

3.18 Cleaning And Protection

A. On completion of installation, including outlets, fittings, and devices, inspect exposed finish. Remove burrs, dirt, paint spots, and construction debris.

B. Protect equipment and installations and maintain conditions to ensure that coatings, finishes, and cabinets are without damage or deterioration at time of Substantial Completion.

3.19 General Tests And Inspections

A. Prepare systems, equipment, and components for tests and inspections, and perform preliminary tests to ensure that systems, equipment, and components are ready for testing. Include the following minimum preparations as appropriate:

1. Perform insulation-resistance tests.
2. Perform continuity tests.
3. Perform rotation test (for motors to be tested).

B. Test Equipment Suitability: Comply with NETA ATS, Section 5.2.

C. Test Equipment Calibration: Comply with NETA ATS, Section 5.3.

D. Test Electrical Connector and Terminal Torque Report: Prepare a report documenting location for each connector/termination, manufacturer's specified torque value for each connector/termination, and field torque value.

E. Test and Inspection Reports: In addition to requirements specified elsewhere, report the following:

1. Manufacturer's written testing and inspecting instructions.
2. Calibration and adjustment settings of adjustable and interchangeable devices involved in tests.
3. Tabulation of expected measurement results made before measurements.
4. Tabulation of "as-found" and "as-left" measurement and observation results.

END OF SECTION

SECTION 26 05 50

EXCAVATION AND BACKFILL

PART 1 - GENERAL

1.1 Related Documents

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

B. Review all project Drawings to be aware of conditions affecting work herein.

PART 2 - PRODUCTS

2.1 Sand: Clean, hard, uncoated grains free from organic matter or other deleterious substances. Sand for backfill shall be of a grade equal to mortar sand, with 95% passing a No. 8 sieve, and not more than 8% passing a No. 100 sieve.

2.2 Gravel: Clean, well-graded hard stone or lime rock gravel, free from organic material. Size range to be from No. 4 screen retentions to 1".

2.3 Earth: Must be free of stones, wood, roots or rubbish.

2.4 Underground-Line Warning Tape: See Specifications Section 26 05 53/Electrical Identification

PART 3 - EXECUTION

3.1 Ditching and Excavation: Shall be performed by hand wherever the possibility of encountering obstacles or any existing utility lines. The Contractor will be totally responsible to ensure that no utility or service interruptions shall be caused and that no existing utilities or obstructions will prohibit installations of service under this Contract at proper grade and location. Where clear and unobstructed areas are to be excavated, appropriate machine excavation methods may be employed. Avoid use of machine excavations within the limits of the building lines except when machine weights and operation will not damage sub-surface structural components or piping.

A. Install longitudinal runs of conduit a minimum of one foot from back of curb or 6 feet from edge of pavement in the absence of curb. If ditches are present, install conduit a minimum of 4 feet from the bottom of the ditch line.

B. Maintain a minimum trench depth of 30 inches (or 12 inches below areas blocked by rock or impenetrable obstructions) below finished grade. Upon completion, restore

surface to like-original condition within 7 calendar days of occurrence of damage. Remove all rock and debris from backfill material. Remove excess material from site and compact area according to NEC Article 300-7. Backfill with excavated material and compact to 95% of original density.

3.2 Bedding: Excavate to bottom grade of raceway to be installed, and shape bed of undisturbed earth to contour of conduit for a width of at least 5% of the conduit diameter. If earth conditions necessitate excavation below raceway grade, bring the bed up to the proper elevation with clean, dry sand deposited in 6" layers and firmly tamped by mechanical means. If sub-cut exceeds 12" or if bed is of an unstable nature, a 6" minimum layer of rock will be required before sand bedding begins.

3.3 Placing: Conduit shall be carefully handled into place in the excavation. Avoid knocking loose soil from the banks of the trench into the conduit bed. Coated conduit shall have special handling slings to prevent damage to the coating. All holidays in the conduit coating shall be touched in before beginning back filling.

A. If one or more conduit is required between the same points, install conduit in one common trench.

B. Backfilling: Deposit earth or sand carefully in 6" layers, maintaining adequate side support. Compact fill in 6" layers, using mechanical means up to the top elevation of the conduit and 12" layers to finish grade.

C. Backfill trench at locations along the trench path where non-movable objects, such as rocks and boulders, cannot be avoided. The purpose of the backfill is to provide a gradual change in elevation of the trench, so that excessive bending and stress will not be transferred to conduits once underground conduit system is installed.

3.4 Identification: Provide identifying metalized plastic warning tape above non-metallic conduit and standard plastic warning tape above metal conduit. Warning tape shall be placed approximately 12" above the conduit. Replace surface to the original condition, i.e., sodding, sprigging, and fine grading.

3.5 Excavation shall be maintained in satisfactory condition during the progress of the work. Sub-surface structures shall be constructed in adequately sized excavations and dewatering equipment shall be installed and properly maintained. Shoring shall be employed in the event of unstable soil conditions and in all cases to protect materials and personnel from injury.

3.6 Conduits to be installed below the footings or foundations shall be installed prior to the installation of the footings. All soil shall be compacted to meet the structural requirements for the footings. If it is not possible to install the conduit prior to pouring of the footings, it shall be necessary for the contractor to provide a bridge footing to span the excavation plus 2 feet on either side of the excavation. The footing modifications shall be approved prior to installation by the Structural Engineer.

3.7 After installation of conduits and upon completion of tamping and backfilling, perform a mandrel test on each conduit to ensure no conduit has been damaged. Furnish a non-metallic mandrel having a diameter of approximately 50% of the inside diameter of the conduit through which it is to be pulled. If damage has occurred, replace the entire length of conduit. Ensure pull cord is re-installed.

3.8 Directional Drilling:

A. Maintain a minimum depth of 4 feet under roadways, driveways, sidewalks, etc.

B. Guarantee the drill rig operator and digital walkover locating system operator are factory-trained to operate the make and model of equipment provided and have at least one-year experience operating the make and model of drill rig. Submit documentation of the operator's training and experience for review at least 2 weeks before start of directional drilling.

C. Provide a means of collecting and containing drilling fluid/slurry that returns to the surface such as a slurry pit. Provide measurements to prevent drilling fluids from entering drainage ditches and storm sewer systems. Prevent drilling fluid/slurry from accumulating on or flowing onto pedestrian walkways, driveways and streets. Immediately remove all drilling fluids/slurry that are accidentally spilled.

D. Directional Drilling Operations:

1. Provide grounding for the drill rig in accordance with the manufacturer's recommendations.
2. Place excavated material near the top of the working pit and dispose of properly. Backfill pits and trenches to facilitate drilling operations immediately after drilling is completed.
3. Use drill head suitable for the type of material being drilled and sized no more than 2 inches larger than the outer diameter of the conduit. Direct drill to obtain proper depth and desired destination. Pressure grout with an approved bentonite/polymer slurry mixture to fill all voids. Do not jet alone or wet bore with water.
4. During drilling operation, locate drill head every 10 feet along drill path and before traversing underground utilities or structures. Use digital walkover locating system to track drill head during directional drilling operation. Ensure locating system is capable of determining pitch, roll, heading, depth and horizontal position of the drill head at any point.
5. Once drill head has reached final location, remove head and install back reamer of appropriate size (no more than 2 inches larger than outer diameter of conduits) to simultaneously facilitate back reaming of drill hole and installation of conduit. Back reamer is sized larger than actual conduits to ensure conduits are not adversely subjected to deviations caused by the original drill operations and are as straight as practical in their final position.
6. The intent of these Specification is to limit the diameter of the actual drill shaft/hole so that it is no more than 2 inches larger than the conduit outer diameter. The 2 inches larger diameter may be accomplished during the original bore or during the back reaming/conduit installation process.

7. Once installation of conduit has started, continue installation without interruption so as to prevent conduit from becoming firmly set. Apply bentonite/polymer slurry mixture during conduit installation.
8. Upon completion of conduit installation, perform a mandrel test on conduit system to ensure conduit has not been damaged. Furnish non-metallic mandrel with a diameter of approximately 50% of the inside diameter of the conduit through which it is to be pulled. If damage has occurred, replace the entire length of conduit and ensure that pull line is re-installed.

E. Drilling Fluids:
1. Use lubrication for subsequent removal of material and immediate installation of the conduit. The use of water and other fluids in connection with directional drilling operations will be permitted only to the extent necessary to lubricate cuttings. Do not jet alone or wet bore with water. Use drilling fluid/slurry consisting of at least 10% high-grade bentonite/polymer slurry to consolidate excavated material and seal drill hole walls.
2. Transport waste drilling fluid/slurry from site and dispose of in a method that complies with Federal, State and local laws and regulations.

3.9 Paved trenching: All conduit installation under existing paved surfaces shall be directional bored. Trenching shall only be permitted with prior approval from the Engineer and Owner. On concrete surfaces, replace the entire joint of concrete unless otherwise specified. On all other surfaces, neatly cut and replace the width of trench with like material.

A. Finish paved areas with materials matching damaged areas. For conduit installed under roadways, cut neatly and replace the width of paved area damaged by trenching. For conduit installed under sidewalks and walkways, remove entire section of slab from joint to joint and replace. Place graded stone material to temporarily maintain traffic where repairs cannot be performed immediately.

3.10 Reconditioning Surfaces:

A. Restore, to their original elevation and condition, unpaved surfaces disturbed during installation of duct, handholes, etc. Preserve sod and topsoil removed during excavation and reinstall after backfilling is completed. Replace sod that is damaged with sod of quality equal to that which was removed. When the surface is disturbed in a newly seeded area, re-seed the restored surface with the same quantity and formula of seed as that used in the original seeding and provide top soiling, fertilizing, liming, seeding, sodding, sprigging, or mulching.

3.11 Paving Repairs:

A. Where trenches, pits, or other excavations are made in existing roadways and other areas of pavement where surface treatment of any kind exists, restore such surface treatment or pavement to the same thickness and in the same kind as previously existed, except as otherwise specified, and to match and tie into the adjacent and surrounding existing surfaces.

END OF SECTION

SECTION 26 05 53

ELECTRICAL IDENTIFICATION

PART 1 - GENERAL

1.1 Related Documents

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 Summary

A. This Section includes the following:

1. Identification for raceway.
2. Identification for conductors and communication and control cable.
3. Underground-line warning tape.
4. Warning labels and signs.
5. Instruction signs.
6. Equipment identification labels.
7. Miscellaneous identification products.

1.3 Submittals

A. Product Data: For each electrical identification product indicated.

B. Schedule of Nomenclature: An index of electrical equipment and system components used in identification signs and labels.

C. Samples: For each type of label and sign to illustrate color, lettering style, and graphic features of identification products.

1.4 Quality Assurance

A. Comply with ANSI C2.

B. Comply with NFPA 70.

C. Comply with ANSI A13.1 and NFPA 70 for color-coding.

PART 2 - PRODUCTS

2.1 Raceway Identification:

A. Paint: Semi-gloss acrylic-enamel.

B. Marker for circuit identification on box covers: Permanent, waterproof, black ink marker (exception: brown and black painted covers which shall use permanent, waterproof, white paint-based marker).

2.2 Conductor and Cable Identification Materials:

A. Color-Coding Conductor Tape: Colored, self-adhesive vinyl tape not less than 3 mils thick by 1 to 2 inches wide.

B. Insulation shall be factory-colored in accordance with paragraph "Installation."

C. Marker Tapes: Vinyl or vinyl-cloth, self-adhesive wraparound type, with circuit identification legend machine printed by thermal transfer or equivalent process.

D. Metal Tags: Brass or aluminum, 2 by 2 by 0.05 inch, with stamped legend, punched for use with self-locking nylon tie fastener.

E. Write-On Tags: Polyester tag, 0.01 inch thick, with corrosion-resistant grommet and polyester or nylon tie for attachment to conductor or cable.

1. Marker for Tags: Permanent, waterproof, black ink marker recommended by tag manufacturer.

2.3 Floor Marking Paint:

A. Semi-gloss Alkyd-Enamel Finish: Two finish coat(s) over a primer.

1. Primer: Interior concrete and masonry primer.
2. Finish Coats: Interior semi-gloss alkyd enamel.

2.4 Underground-line Warning Tape:

A. Description: Permanent, bright-colored, continuous-printed, polyethylene tape.

1. Not less than 6 inches wide by 5.5 mils thick.
2. Compounded for permanent direct-burial service.
3. Embedded continuous metallic strip or core 3.5 mils thick.
4. Printed legend shall indicate type of underground line.

2.5 Warning Labels and Signs:

A. Comply with NFPA 70 and 29 CFR 1910.145.

B. Self-Adhesive Warning Labels: Factory printed, multicolor, pressure-sensitive adhesive labels, configured for display on front cover, door, or other access to equipment, unless otherwise indicated.

C. Baked-Enamel Warning Signs: Preprinted aluminum signs, punched or drilled for fasteners, with colors, legend, and size required for application. 1/4-inch grommets in corners for mounting. Nominal size, 7 by 10 inches.

D. Metal-Backed, Butyrate Warning Signs: Weather-resistant, nonfading, preprinted, cellulose-acetate butyrate signs with 0.0396-inch galvanized-steel backing; and with colors, legend, and size required for application. 1/4-inch grommets in corners for mounting. Nominal size, 10 by 14 inches.

E. Warning label and sign shall include, but are not limited to, the following legends:

F. Multiple Power Source Warning: "DANGER - ELECTRICAL SHOCK HAZARD - EQUIPMENT HAS MULTIPLE POWER SOURCES."

2.6 Instruction Signs:

A. Engraved, laminated acrylic or melamine plastic, minimum 1/16 inch thick for signs up to 20 sq. in. and 1/8 inch thick for larger sizes.

B. Engraved legend with black letters on white face.

C. Punched or drilled for mechanical fasteners.

D. Framed with mitered acrylic molding and arranged for attachment at applicable equipment.

2.7 Equipment Identification Labels:

A. Engraved, Laminated Acrylic or Melamine Label: Punched or drilled for screw mounting. Black letters on a white background. White letters on a red background for Emergency and Optional Standby systems.

2.8 Miscellaneous Identification Products:

A. Cable Ties: Fungus-inert, self-extinguishing, 1-piece, self-locking, Type 6/6 nylon cable ties.

B. Fasteners for Labels and Signs: Self-tapping, stainless-steel screws or stainless-steel machine screws with nuts and flat and lock washers.

PART 3 - EXECUTION

3.1 Accessible Raceways More Than 600 V:

A. Identify with "DANGER-HIGH VOLTAGE" in black letters at least 2 inches high, with self-adhesive vinyl labels. Repeat legend at 10-foot maximum intervals.

3.2 Accessible Raceways 600 V or Less, for Service, Feeder, and Branch Circuits:

A. Identify interior raceway systems with paint as follows:

1. Conduits: paint all couplings per the color coding below.
2. Junction Boxes:
   a. Paint all junction and pull box covers per the color coding below.
   b. For covers containing branch circuits: after painting the cover the appropriate color, hand write the panelboard/circuit number contained in the box (i.e. 2P1-15,17,19).
   c. For covers containing feeder circuits: after painting the cover the appropriate color, hand write the feeding panel and load panel (i.e. 4D1 to 2P1A).

B. Coupling and box cover colors as follows:

1. 120/208 Volt Systems: Black.
2. 277/480 Volt Systems: Brown.
3. 120/208 and 277/480 Volt System Junction Boxes containing Emergency Circuits: Paint box cover color of voltage and provide a red stripe.

C. Identify interior Essential Electrical System raceway systems as follows:
1. Conduits (including couplings and fittings) located above ceilings and exposed in mechanical and electrical rooms shall be factory finished per the color coding below.
2. Junction Boxes:
   a. Paint all junction and pull box covers per the color coding below.
   b. For covers containing branch circuits: after painting the cover the appropriate color, hand write the panelboard/circuit number contained in the box (i.e. 2LS1-2).
   c. For covers containing feeder circuits: after painting the cover the appropriate color, hand write the feeding panel and load panel (i.e. 4E1 to 4LS1).

3.3 Accessible Raceways 600V or Less, for Service, Feeder, and Branch Circuits:

A. Identify interior raceway systems as follows:

1. Conduits (including couplings and fittings) located above ceilings and exposed in mechanical and electrical rooms shall be factory finished per the color coding below. Exception: conduits located in areas with exposed ceilings may be painted to match surrounding finish provided the couplings and box covers are painted per the color coding below.
2. Junction boxes:
   a. Paint all junction, pull boxes, and covers per the color coding below.
   b. For covers containing branch circuits: after painting the cover the appropriate color, hand write the panelboard/circuit number contained in the box and voltage (i.e. 2P1-15,17,19 / 120/208V). Except as indicated below.
   c. For covers containing feeder circuits: after painting the cover the appropriate color, hand write the feeding panel and load panel and voltage (i.e. 4D1 to TP1A / 480V). Except as indicated below.

d. For covers in exposed finished areas: After painting the cover the appropriate color, affix a permanent label identifying the circuit/feeder information.
e. For covers containing lighting control cabling: after painting the cover the appropriate color, label cover with white stenciled lettering reading "LC."

B. Color coding as follows:

1. 120/208V Normal Power Systems: Silver (Unpainted)
2. 120/240V Normal Power Systems: Purple
3. 277/480V Normal Power Systems: Yellow
4. NEC Article 700 Emergency Power Systems: Orange
5. NEC Article 701 Optional Standby Power Systems: Green
6. Fire Alarm: Red
7. Telecommunications: Blue
8. Security / Access Control / CCTV: White
9. Lighting Controls: Black
10. Other Systems: Paint a unique color (do not use any of the above colors.

3.4 Conductors:

A. Use system of marker tape designations that is uniform and consistent with system used by manufacturer for factory-installed connections.

B. Coordinate identification with Project Drawings, manufacturer's wiring diagrams, and Operation and Maintenance Manual.

C. Power-Circuit Conductor Identification: For conductors No. 1/0 AWG and larger in vaults, pull and junction boxes, manholes, and handholes use color-coding conductor tape. Identify source and circuit number of each set of conductors. For single conductor cables, identify phase in addition to the above.

D. Branch-Circuit Conductor Identification: Where there are conductors for more than three branch circuits in same junction or pull box, use color-coding conductor tape. Identify each ungrounded conductor according to source and circuit number.

E. Auxiliary Electrical Systems Conductor Identification: Identify field-installed alarm, control, signal, sound, intercommunications, voice, and data connections.

3.5 Locations of Underground Lines: Identify with underground-line warning tape for power, lighting, communication, and control wiring and optical fiber cable. Install underground-line warning tape for both direct-buried cables and cables in raceway.

3.6 Warning Labels for Indoor Cabinets, Boxes, and Enclosures for Power and Lighting: Comply with 29 CFR 1910.145 and apply self-adhesive warning labels. Identify system voltage with black letters on an orange background. Apply to exterior of door, cover, or other access.

3.7 Equipment with Multiple Power or Control Sources: Apply to door or cover of equipment including, but not limited to, the following:

A. Power transfer switches.

B. Controls with external control power connections.

3.8 Equipment Requiring Workspace Clearance According to NFPA 70: Unless otherwise indicated, apply to door or cover of equipment but not on flush panelboards and similar equipment in finished spaces.

3.9 Instruction Signs:

A. Operating Instructions: Install instruction signs to facilitate proper operation and maintenance of electrical systems and items to which they connect. Install instruction signs with approved legend where instructions are needed for system or equipment operation.

B. Emergency Operating Instructions: Install instruction signs with white legend on a red background with minimum 3/3inch high letters for emergency instructions at equipment.

3.10 Equipment Identification Labels: On each unit of equipment, install unique designation label that is consistent with wiring diagrams, schedules, and Operation and Maintenance Manual. Apply labels to disconnect switches and protection equipment, central or master units, control panels, control stations, terminal cabinets, and racks of each system. Systems include power, lighting, control, communication, signal, monitoring, and alarm systems unless equipment is provided with its own identification.

3.11 Labeling Instructions:

A. Indoor Equipment: Engraved, laminated acrylic or melamine label. Unless otherwise indicated, provide a with 1/4-inch high letters on 1-inch high label.

B. Outdoor Equipment: Engraved, laminated acrylic or melamine label.

C. Elevated Components: Increase sizes of labels and letters to those appropriate for viewing from the floor.

D. Equipment to Be Labeled:

1. Panelboards, electrical cabinets, and enclosures.
2. Access doors and panels for concealed electrical items.
3. Electrical switchgear and switchboards.
4. Transformers.
5. Electrical substations.
6. Emergency system boxes and enclosures.
7. Motor-control centers.

8. Disconnect switches.
9. Enclosed circuit breakers.
10. Motor starters.
11. Push-button stations.
12. Power transfer equipment.
13. Contactors.
14. Remote-controlled switches, dimmer modules, and control devices.
15. Battery inverter units.
16. Battery racks.
17. Power-generating units.
18. Voice and data cable terminal equipment.
19. Master clock and program equipment.
20. Intercommunication and call system master and staff stations.
21. Television/audio components, racks, and controls.
22. Fire-alarm control panel and annunciators.
23. Security and intrusion-detection control stations, control panels, terminal cabinets, and racks.
24. Monitoring and control equipment.
25. Uninterruptible power supply equipment.
26. Terminals, racks, and patch panels for voice and data communication and for signal and control functions.

3.12 Installation:

A. Verify identity of each item before installing identification products.

B. Location: Install identification materials and devices at locations for most convenient viewing without interference with operation and maintenance of equipment.

C. Apply identification devices to surfaces that require finish after completing finish work.

D. Self-Adhesive Identification Products: Clean surfaces before application, using materials and methods recommended by manufacturer of identification device.

E. Attach non-adhesive signs and plastic labels with screws and auxiliary hardware appropriate to the location and substrate.

F. Color-Coding for Phase and Voltage Level Identification, 600 V and Less: Use the colors listed below for ungrounded service, feeder, and branch-circuit conductors.

Phase	**208/120-V Circuits**	**480/277-V Circuits**
A	Black	Brown
B	Red	Orange
C	Blue	Yellow
Neutral	White	Gray
Ground	Green	Green W/ Yellow Stripe

Phase	**208/120-V Circuits**	**480/277-V Circuits**
A	Black	Brown
B	Red	Orange

C	Blue	Yellow
Neutral	White Striped *	Gray Striped *
Ground	Green	Green W/ Yellow Stripe
* The neutral wire shall be striped with the color of the phase conductor. Multi-wire branch circuits using a common neutral are not permitted.		

G. Field-Applied, Color-Coding Conductor Tape: Apply in half-lapped turns for a minimum distance of 6 inches from terminal points and in boxes where splices or taps are made. Apply last two turns of tape with no tension to prevent possible unwinding. Locate bands to avoid obscuring factory cable markings.

H. Aluminum Wraparound Marker Labels and Metal Tags: Secure tight to surface of conductor or cable at a location with high visibility and accessibility.

I. Underground-Line Warning Tape: During backfilling of trenches install continuous underground-line warning tape directly above line at 18" to 30" above the line and not less than 6" below grade. Use multiple tapes where width of multiple lines installed in a common trench exceeds 16 inches overall.

J. Painted Identification: Prepare surface and apply paint according to Division 09 painting Sections.

K. Identification Schedule: Prior to Substantial Completion Inspection provide one framed and under glass 11" x 17" color copy of the approved Identification Schedule in each electrical room.

END OF SECTION

SECTION 26 32 12

NATURAL GAS GENERATOR

PART 1 - GENERAL

1.1 Related Documents

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 Summary

A. This Section includes packaged natural gas engine generator sets with the following features and accessories:

1. Battery charger.
2. Base mounted fuel tank.
3. Engine-generator set.
4. Muffler.
5. Exhaust piping external to set.
6. Outdoor enclosure.
7. Remote annunciator.
8. Remote stop switch.
9. Starting battery.
10. Battery heater.
11. Block heater.

B. Related Sections include the following:

1. Division 16 Section "Transfer Switches" for transfer switches including sensors and relays to initiate automatic-starting and -stopping signals for engine-generator sets.

1.3 Definitions

A. Operational Bandwidth: The total variation from the lowest to highest value of a parameter over the range of conditions indicated, expressed as a percentage of the nominal value of the parameter.

B. Steady-State Voltage Modulation: The uniform cyclical variation of voltage within the operational bandwidth, expressed in Hertz or cycles per second.

1.4 Submittals

A. Product Data: Include the following:

1. Data on features, components, accessories ratings, and performance.
2. Thermal damage curve for generator.
3. Time-current characteristic curves for generator protective device.
4. Recommended circuit breaker setting.

B. Shop Drawings: Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.

1. Dimensioned outline plan and elevation drawings of engine-generator set and other components specified.
2. Design Calculations: Signed and sealed by a qualified professional engineer. Calculate requirements for selecting vibration isolators and seismic restraints and for designing vibration isolation bases.
3. Vibration Isolation Base Details: Signed and sealed by a qualified professional engineer. Detail fabrication, including anchorages and attachments to structure and to supported equipment. Include base weights.
4. Wiring Diagrams: Power, signal, and control wiring.

C. Qualification Data: For manufacturer.

D. Certified summary of prototype-unit test report.

E. Certified Test Reports: For components and accessories that are equivalent, but not identical, to those tested on prototype unit.

F. Certified Summary of Performance Tests: Demonstrate compliance with specified requirement to meet performance criteria for sensitive loads.

G. Test Reports:

1. Report of factory test on units to be shipped for this Project, showing evidence of compliance with specified requirements.
2. Report of sound generation.
3. Field quality-control test reports.

H. Certification of Torsional Vibration Compatibility: Comply with NFPA 110.

I. Operation and Maintenance Data: For packaged engine generators to include in emergency, operation, and maintenance manuals. In addition, include the following:

1. List of tools and replacement items recommended to be stored at the Project for ready access. Include part and drawing numbers, current unit prices, and source of supply.

J. Warranty: Special warranty specified in this Section.

1.5 Quality Assurance

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

1. Maintenance Proximity: Not more than 4 hours' normal travel time from Installer's place of business to Project site.
2. Engineering Responsibility: Preparation of data for vibration isolators and seismic restraints of engine skid mounts, including Shop Drawings, based on testing and engineering analysis of manufacturer's standard units in assemblies similar to those indicated for this Project.

B. Manufacturer's Distributor Qualifications: A qualified supplier. Maintain, within 100 miles of Project site, a service center capable of providing training, parts, and emergency maintenance repairs. Service cannot be sublet to another service organization.

C. Source Limitations: Obtain packaged generator sets and auxiliary components through one source from a single manufacturer.

D. Comply with NFPA 30 37A.

E. Comply with NFPA 70.

F. Comply with NFPA 99.

G. Comply with NFPA 110 requirements for emergency power supply system.

H. Engine Exhaust Emissions: Comply with applicable state and local government requirements.

I. Noise Emission: Comply with applicable state and local government requirements for maximum noise level at adjacent property boundaries due to sound emitted by generator set including engine, engine exhaust, engine cooling-air intake and discharge, and other components of installation.

1.6 Coordination

A. Coordinate size and location of concrete bases. Cast anchor-bolt inserts into bases. Concrete, reinforcement, and formwork requirements are specified in Division 3.

1.7 Warranty

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of packaged engine generators and associated auxiliary components that fail in materials or workmanship within specified warranty period.

1. Warranty Period: Five years from date of Substantial Completion.

1.8 Maintenance Service

A. Initial Maintenance Service: Beginning at Substantial Completion, provide 12 months' full maintenance by skilled employees of manufacturer's designated service organization. Include quarterly exercising to check for proper starting, load transfer,

and running under load. Include routine preventive maintenance as recommended by manufacturer and adjusting as required for proper operation. Maintenance agreements shall include parts and supplies as used in manufacture and installation of original equipment.

PART 2 - PRODUCTS

2.1 Manufacturers

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Caterpillar; Engine Div.
2. Kohler Co; Generator Division.
3. Onan Corp./Cummins Power Generation; Industrial Business Group.
4. Generac Power Systems, Inc.

2.2 Engine-Generator Set

A. Packaged engine-generator set shall be a coordinated assembly of compatible components.

B. Power Output Ratings: Nominal ratings as indicated, with capacity as required to operate as a unit as evidenced by records of prototype testing.

C. Output Connections: Three phase, four wire unless otherwise stated.

D. Safety Standard: Comply with ASME B15.1.

E. Nameplates: Each major system component shall be equipped with a nameplate to identify manufacturer's name and address, and model and serial number of components.

F. Mounting Frame: Adequate strength and rigidity to maintain alignment of mounted components without depending on concrete foundation. Mounting frame shall be free from sharp edges and corners and shall have lifting attachments arranged for lifting with slings without damaging components.

1. Rigging Diagram: Inscribed on metal plate permanently attached to mounting frame to indicate location and lifting capacity of each lifting attachment and generator-set center of gravity.

2.3 Generator-Set Performance

A. Oversizing generator compared with the rated power output of the engine is permissible to meet specified performance.

1. Nameplate Data for Oversized Generator: Show ratings required by the Contract Documents rather than ratings that would normally be applied to generator size installed.
2. Generator temperature shall be Class F or Class B. Minimum ratings shall be 90 degree C Lloyds, 95 degree C ABS, 105 degree C continuous, 130 degree C standby (Rise by resistance method, Mil-Std-705, Method 680.1b).

B. Steady-State Voltage Operational Bandwidth: 1 percent of rated output voltage from no load to full load.

C. Steady-State Voltage Modulation Frequency: Less than 1 Hz.

D. Transient Voltage Performance: Not more than 10 percent variation for 50 percent step-load increase or decrease. Voltage shall recover and remain within the steady-state operating band within 0.5 second.

E. Steady-State Frequency Operational Bandwidth: Plus or minus 0.25 percent of rated frequency from no load to full load.

F. 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.

G. Transient Frequency Performance: Less than 2-Hz variation for a 50 percent step-load increase or decrease. Frequency shall recover and remain within the steady-state operating band within three seconds.

H. Output Waveform: At no load, harmonic content measured line to neutral shall not exceed 2 percent total with no slot ripple. The telephone influence factor, determined according to NEMA MG 1, shall not exceed 50 percent.

I. Sustained Short-Circuit Current: For a 3-phase, bolted short circuit at system output terminals, the system shall supply a minimum of 300 percent of rated full-load current for not less than 10 seconds and then clear the fault automatically, without damage to winding insulation or other generator system components and without a current boost system.

J. Excitation System: Performance shall be unaffected by voltage distortion caused by nonlinear load.

K. Start Time: Comply with NFPA 110, Type 10, system requirements.

2.4 Service 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: Minus 15 to plus 40 deg C.
2. Altitude: Sea level to 500 feet.

2.5 Engine

A. Fuel: **Natural gas**.

B. Rated Engine Speed: 1800 rpm.

C. Maximum Piston Speed for Four-Cycle Engines: 2250 fpm (11.4 m/s).

D. Lubrication System: The following items are mounted on engine or skid:

1. Filter and Strainer: Rated to remove 90 percent of particles 5 micrometers and smaller while passing full flow.
2. Thermostatic Control Valve: Control flow in system to maintain optimum oil temperature. Unit shall be capable of full flow and is designed to be fail-safe.
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.

E. Engine Fuel System:

1. Main Fuel Pump: Mounted on engine. Pump ensures adequate primary fuel flow under starting and load conditions.
2. Relief-Bypass Valve: Automatically regulates pressure in fuel line and returns excess fuel to source.

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.

G. Governor: Adjustable isochronous, with speed sensing.

2.6 Engine Cooling System

A. Description: Closed loop, liquid cooled, with radiator factory mounted on engine-generator-set mounting frame and integral engine-driven coolant pump.

B. Radiator: Rated for specified coolant.

C. Coolant: Solution of 50 percent ethylene-glycol-based antifreeze and 50 percent water, with anticorrosion additives as recommended by engine manufacturer.

D. Temperature Control: Self-contained, thermostatic-control valve modulates coolant flow automatically to maintain optimum constant coolant temperature as recommended by engine manufacturer.

E. Coolant Hose: Flexible assembly with inside surface of nonporous rubber and outer covering of aging-, ultraviolet-, and abrasion-resistant fabric.

1. Rating: 50-psig (345-kPa) maximum working pressure with coolant at 180 deg F (82 deg C), and noncollapsible under vacuum.
2. End Fittings: Flanges or steel pipe nipples with clamps to suit piping and equipment connections.

2.7 Fuel Supply System

A. Natural Gas (Vapor-Withdrawal) System:

a. Carburetor.
b. Gas Regulator:
c. Fuel-Shutoff Solenoid Valves.
d. Flexible Fuel Connectors.

2.8 Engine Exhaust System

A. Muffler: Critical type, sized as recommended by engine manufacturer; sound level measured at a distance of 10 feet (3 m) from exhaust discharge shall be 85 dBA or less. Muffler shall be mounted inside generator weatherproof housing. Shall be mounted such that generator housing can be fully opened for maintenance.

B. Condensate Drain for Muffler: Schedule 40, black steel pipe connected to muffler drain outlet through a petcock.

C. Connection from Engine to Exhaust System: Flexible section of corrugated stainless-steel pipe.

D. Connection from Exhaust Pipe to Muffler: Stainless-steel expansion joint with liner.

E. Exhaust Piping External to Engine: ASTM A 53/A 53M, Schedule 40, welded, black steel, with welded joints and fittings and exterior insulation.

F. Rain Cap: Rain cap shall be aluminum or stainless steel and shall penetrate the top of the housing and contain no elbows outside housing.

2.9 Combustion-Air Intake

A. Description: Heavy-duty, engine-mounted air cleaner with replaceable dry-filter element and "blocked filter" indicator.

2.10 Starting System

A. Description: 24-V electric, with negative ground and including the following items:

1. Components: Sized so they will not be damaged during a full engine-cranking cycle with ambient temperature at maximum specified in "Environmental Conditions" Paragraph in "Service Conditions" Article.
2. Cranking Motor: Heavy-duty unit that automatically engages and releases from engine flywheel without binding.
3. Cranking Cycle: As required by NFPA 110 for system level specified.
4. Battery: Adequate capacity within ambient temperature range specified in "Environmental Conditions" Paragraph in "Service Conditions" Article to provide specified cranking cycle at least twice without recharging.

5. Battery Cable: Size as recommended by engine manufacturer for cable length indicated. Include required interconnecting conductors and connection accessories.
6. Battery Compartment: Factory fabricated of metal with acid-resistant finish and thermal insulation. Thermostatically controlled heater shall be arranged to maintain battery above 10 deg C regardless of external ambient temperature within range specified in "Environmental Conditions" Paragraph in "Service Conditions" Article. Include accessories required to support and fasten batteries in place.
7. Battery-Charging Alternator: Factory mounted on engine with solid-state voltage regulation and 35-A minimum continuous rating.
8. Battery Heater: Provide where generator is installed outdoors. Provide automatic disconnect for when generator is running.
9. Battery Charger: Current-limiting, automatic-equalizing and float-charging type. Unit shall comply with UL 1236 and include the following features:
    a. Operation: Equalizing-charging rate of 10 A 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 40 deg C to plus 60 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. Ammeter and Voltmeter: Flush mounted in door. Meters shall indicate charging rates.
    e. 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.
    f. Enclosure and Mounting: NEMA 250, Type 1, wall-mounted cabinet.

2.11 Control And Monitoring

A. Functional Description: 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 the generator set. When mode-selector switch is switched to the on position, the generator set starts. The off position of the same switch initiates generator-set shutdown. When generator set is running, specified system or equipment failures or derangements automatically shut down the generator set and initiate alarms. Operation of a remote emergency-stop switch also shuts down the generator set. Control system shall be microprocessor based.

B. Configuration: Operating and safety indications, protective devices, basic system controls, and engine gages shall be grouped in a common control and monitoring panel mounted on the generator set. Mounting method shall isolate the control panel from generator-set vibration.

C. Indicating and protective devices and controls shall include those required by NFPA 110, and the following:

D. Indicating and Protective Devices and Controls:

1. AC voltmeter.
2. AC ammeter.
3. AC frequency meter.
4. DC voltmeter (alternator battery charging).
5. Engine-coolant temperature gauge.
6. Engine lubricating-oil pressure gauge.
7. Running-time meter.
8. Ammeter-voltmeter, phase-selector switch(es).
9. Generator-voltage adjusting rheostat.
10. Start-stop switch.
11. Overspeed shutdown device.
12. Coolant high-temperature shutdown device.
13. Coolant low-level shutdown device.
14. Oil low-pressure shutdown device.
15. Fuel tank derangement alarm.
16. Fuel tank high-level shutdown of fuel supply alarm.

E. Supporting Items: Include sensors, transducers, terminals, relays, and other devices and include wiring required to support specified items. Locate sensors and other supporting items on engine or generator, unless otherwise indicated.

F. Connection to Data Link: A separate terminal block, factory wired to Form C dry contacts, for each alarm and status indication is reserved for connections for data-link transmission of indications to remote data terminals. Data system connections to terminals are covered in Division 16 Section "Electrical Power Monitoring and Control."

G. Common Remote Audible Alarm: Signal the occurrence of any events listed below without differentiating between event types. Connect so that after an alarm is silenced, clearing of initiating condition will reactivate alarm until silencing switch is reset.

1. Engine high-temperature shutdown.
2. Lube-oil low-pressure shutdown.
3. Overspeed shutdown.
4. Remote emergency-stop shutdown.
5. Engine high temperature prealarm.
6. Lube-oil low-pressure prealarm.
7. Fuel tank, low-fuel level.
8. Low coolant level.
9. Overcrank shutdown.
10. Coolant low-temperature alarm.
11. Control switch not in auto position.
12. Battery-charger malfunction alarm.
13. Battery low-voltage alarm.

H. Remote Alarm Annunciator: Comply with NFPA 99. Labeled LED shall identify each alarm event. Common audible signal shall sound for alarm conditions. Silencing switch in face of panel shall silence signal without altering visual indication. Connect so that

after an alarm is silenced, clearing of initiating condition will reactivate alarm until silencing switch is reset. Cabinet and faceplate are surface- or flush-mounting type to suit mounting conditions indicated.

I. Remote Emergency-Stop Switch: Flush; wall mounted, unless otherwise indicated; and labeled. Push button shall be protected from accidental operation. Install as indicated on the Drawings or Engineer approved location.

J. Provide TVSS on all circuits exiting genset.

2.12 Generator Overcurrent And Fault Protection

A. Generator Circuit Breaker: Molded-case, thermal-magnetic type; 100 percent rated; complying with NEMA AB 1 and UL 489.

1. Tripping Characteristic: Designed specifically for generator protection. Provide circuit breaker settings to coordinate with generator damage characteristics.
2. Trip Rating: Matched to generator rating.
3. Shunt Trip: Connected to trip breaker when generator set is shut down by other protective devices.
4. Mounting: Adjacent to or integrated with control and monitoring panel.

B. Ground-Fault Indication (where indicated on drawings): Comply with NFPA 70, Article 700-7(d). Integrate ground-fault alarm indication with other generator-set alarm indications.

2.13 Generator, Exciter, And Voltage Regulator

A. Comply with NEMA MG 1 and specified performance requirements.

B. Drive: Generator shaft shall be directly connected to engine shaft. Exciter shall be rotated integrally with generator rotor.

C. Electrical Insulation: Class F.

D. Stator-Winding Leads: Brought out to terminal box to permit future reconnection for other voltages if required.

E. Construction shall prevent mechanical, electrical, and thermal damage due to vibration, overspeed up to 125 percent of rating, and heat during operation at 110 percent of rated capacity.

F. Excitation shall use no slip or collector rings, or brushes, and shall be arranged to sustain generator output under short-circuit conditions as specified.

G. Enclosure: Dripproof.

H. Instrument Transformers: Mounted within generator enclosure.

I. Voltage Regulator: Solid-state type, separate from exciter, providing performance as specified.

1. Adjusting rheostat on control and monitoring panel shall provide plus or minus 5 percent adjustment of output-voltage operating band. Isolated from load to prevent tracking.

J. Strip Heater: Thermostatically controlled unit arranged to maintain stator windings above dew point.

K. Windings: Two-thirds pitch stator winding and fully linked amortisseur winding. Dipped and baked, harmonic distortion not to exceed 5% total RMS line to line.

L. Subtransient Reactance: 12 percent, maximum.

2.14 Outdoor Generator-Set Enclosure

A. Description: Vandal-resistant, weatherproof painted marine-grade aluminum, or galvanized steel housing, wind resistant up to 125 mph. Multiple panels shall be lockable and provide adequate access to components requiring maintenance. Panels shall be removable by one person without tools. Instruments and control shall be mounted within enclosure. All hardware and screws shall be stainless steel.

B. Engine Cooling Airflow through Enclosure: Maintain temperature rise of system components within required limits when unit operates at 110 percent of rated load for 2 hours with ambient temperature at top of range specified in system service conditions.

1. Louvers: Fixed-engine cooling-air inlet and discharge. Storm-proof and drainable louvers prevent entry of rain and snow.

2.15 Finishes

A. Indoor and Outdoor Enclosures and Components: Manufacturer's electrostatically applied powder coat over corrosion-resistant pretreatment and compatible standard primer.

2.16 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 Paragraphs 3.2.1, 3.2.1.1, and 3.2.1.2.
2. Generator Tests: Comply with IEEE 115.
3. Components and Accessories: Items furnished with installed unit that are not identical to those on tested prototype shall have been factory tested to demonstrate compatibility and reliability.

B. Project-Specific Equipment Tests: Before shipment, factory test engine-generator set, and other system components and accessories manufactured specifically for this Project. Perform tests at rated load and power factor. Include the following tests:

1. Full load run.
2. Maximum power.
3. Voltage regulation.
4. Transient and steady-state governing.
5. Single-step load pickup.
6. Safety shutdown.

C. Report factory test results within 10 days of completion of test.

PART 3 - EXECUTION

3.1 Examination

A. Examine areas, equipment bases, and conditions, with Installer present, for compliance with requirements for installation and other conditions affecting packaged engine-generator performance.

B. Examine roughing-in of piping systems and electrical connections. Verify actual locations of connections before packaged engine-generator installation.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 Concrete Bases

A. Coordinate size and location of concrete bases. Shall be 8" thick, exceeding genset footprint by 12" on all sides and be 4" higher than grade level. Provide as defined in 16034. Provide rebar reinforcement, #6 on 12" centers on top and bottom. Provide a ground strap from rebar, 4/0 copper.

B. Provide a counterpoise ground loop around the concrete pad. Ground loop shall be 4/0 copper, 12" below grade. Provide two driven ground rods on opposite corners of the counterpoise loop. Ground rods shall be copper clad ¾" x 30'. Bond pad rebar with counterpoise loop. Provide a 4/0 copper lead to the generator grounding pad.

3.3 Installation

A. Comply with packaged engine-generator manufacturers' written installation and alignment instructions and with NFPA 110.

B. Install packaged engine generators level on concrete base.

1. Vibration Isolation: Mount packaged engine generators on restrained spring isolators or internal vibration isolators.

C. Install packaged engine generator to provide access, without removing connections or accessories, for periodic maintenance.

D. Install exhaust-system piping. Extend to point of termination outside structure. Size piping according to manufacturer's written instructions.

1. Install condensate drain piping for engine exhaust system. Extend drain piping from low points of exhaust system and from muffler to condensate traps and to point of disposition.
2. Support exhaust piping and muffler with pipe hangers spaced a maximum of 20 feet (6 m) horizontally and at each floor vertically. Pipe hangers are specified in Division 15 Section "Hangers and Supports."
3. Restrain exhaust piping and mufflers with cable-type bracing assemblies. Cable-type bracing assemblies are specified in Division 16 Section "Seismic Controls for Electrical Work."
4. All exhaust piping and muffler within the building shall be insulated by manufacturer approved insulation system.
5. Provide a manufacturer approved rain cap on the end of the exhaust piping.
6. Provide approved building sleeve where exhaust exits the building. Sleeve shall be weatherproof.

E. Electrical Wiring: Install electrical devices furnished by equipment manufacturers but not specified to be factory mounted.

3.4 Connections

A. Drawings indicate general arrangement of piping and specialties. The following are specific connection requirements:

1. Connect fuel piping to engines with a gate valve and union.
   a. Natural- and LP-gas piping, valves, and specialties for gas distribution outside the building are specified in Division 2 Section "Natural Gas Distribution."
   b. Natural- and LP-gas piping, valves, and specialties for gas piping inside the building are specified in Division 15 Section "Fuel Gas Piping."
2. Connect exhaust-system piping to engines.

B. Ground equipment according to Division 16 Section "Grounding and Bonding." Generator shall be configured as a “separately derived electrical system” by bonding the neutral and ground at the generator.

C. Connect wiring according to Division 16 Section "Conductors and Cables."

D. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A.

3.5 Identification

A. Identify system components according to Division 16 Section "Basic Electrical Materials and Methods."

3.6 Field Quality Control

A. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect, test, and adjust field-assembled components and equipment installation, including connections, and to assist in field testing. Report results in writing.

B. Perform the following field tests and inspections and prepare test reports:

1. Perform each electrical test and visual and mechanical inspection stated in NETA ATS, Sections 7.15.2.1 and 7.22.1 (except for vibration baseline test). Certify compliance with test parameters.
2. Perform tests recommended by manufacturer.
3. NFPA 110 Acceptance Tests: Perform tests required by NFPA 110 that are additional to those specified here including, but not limited to, the following:
    a. Single-step full-load pickup test.
4. Battery Tests: Equalize charging of battery cells according to manufacturer's written instructions. Record individual cell voltages.
    a. Measure charging voltage and voltages between available battery terminals for full-charging and float-charging conditions. Check electrolyte level and specific gravity under both conditions.
    b. Test for contact integrity of all connectors. Perform an integrity load test and a capacity load test for the battery.
    c. Verify acceptance of charge for each element of the battery after discharge.
    d. Verify that measurements are within manufacturer's specifications.
5. Battery-Charger Tests: Verify specified rates of charge for both equalizing and float-charging conditions.
6. System Integrity Tests: Methodically verify proper installation, connection, and integrity of each element of engine-generator system before and during system operation. Check for air, exhaust, and fluid leaks.

C. Coordinate tests with tests for transfer switches and run them concurrently.

D. Test instruments shall have been calibrated within the last 12 months, traceable to standards of the National Institute for Standards and Technology, and adequate for making positive observation of test results. Make calibration records available for examination on request.

E. Leak Test: After installation, charge system and test for leaks. Repair leaks and retest until no leaks exist.

F. Operational Test: After electrical circuitry has been energized, start units to confirm proper motor rotation and unit operation.

G. Perform reactive load bank test for a minimum of 4 hours at 0.8 pf.

H. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

I. Remove and replace malfunctioning units and retest as specified above.

J. Retest: Correct deficiencies identified by tests and observations and retest until specified requirements are met.

K. Report results of tests and inspections in writing. Record adjustable relay settings and measured insulation resistances, time delays, and other values and observations. Attach a label or tag to each tested component indicating satisfactory completion of tests.

3.7 Startup Service

A. Engage a factory-authorized service representative to perform startup service.

B. Inspect field-assembled components and equipment installation, including piping and electrical connections. Report results in writing.

C. Complete installation and startup checks according to manufacturer's written instructions. Provide test documentation to Engineer.

3.8 Demonstration

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain packaged engine generators.

1. Coordinate this training with that for transfer switches.

END OF SECTION

SECTION 26 32 20

TRANSFER SWITCHES

PART 1 - GENERAL

1.1 Related Documents

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 Summary

A. This Section includes transfer switches rated 600 V and less, including the following:

1. Automatic transfer switches.
2. Bypass/isolation switches.
3. Nonautomatic transfer switches.

1.3 Submittals

A. Product Data: Include rated capacities, operating characteristics, furnished specialties, and accessories.

B. Shop Drawings: Dimensioned plans, sections, and elevations showing minimum clearances, conductor entry provisions, gutter space, installed features and devices, and material lists for each switch specified.

1. Wiring Diagrams: Single-line diagram. Show connections between transfer switch, bypass/isolation switch, power sources, and load; and show interlocking provisions for each combined transfer switch and bypass/isolation switch.

C. Field quality-control test reports.

D. Operation and Maintenance Data: For each type of product to include in emergency, operation, and maintenance manuals. In addition, include the following:

1. Features and operating sequences, both automatic and manual.
2. List of all factory settings of relays; provide relay-setting and calibration instructions, including software, where applicable.

1.4 Quality Assurance

A. Manufacturer Qualifications: Maintain a service center capable of providing training, parts, and emergency maintenance repairs within a response period of less than eight hours from time of notification.

B. Source Limitations: Obtain automatic transfer switches, bypass/isolation switches, nonautomatic transfer switches, remote annunciators, and remote annunciator and control panels through one source from a single manufacturer.

C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, for emergency service under UL 1008, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

D. Comply with NEMA ICS 1.

E. Comply with NFPA 70.

F. Comply with NFPA 99.

G. Comply with NFPA 110.

H. Comply with UL 1008 unless the requirements of these Specifications are stricter.

PART 2 - PRODUCTS

2.1 Manufacturers

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Contactor Transfer Switches:
   a. Emerson; ASCO Power Technologies, LP.
   b. Kohler Co.; Generator Division.
   c. Onan Corp./Cummins Power Generation; Industrial Business Group.
   d. Russelectric, Inc.

2.2 General Transfer-Switch Product Requirements

A. Indicated Current Ratings: Apply as defined in UL 1008 for continuous loading and total system transfer, including 100% tungsten filament lamp loads.

B. Tested Fault-Current Closing and Withstand Ratings: Adequate for duty imposed by protective devices at installation locations in Project under the fault conditions indicated, based on testing according to UL 1008.

C. Control, and Programming Interface Components: Devices at transfer switches for communicating with remote programming devices, annunciators, or annunciator and control panels have communication capability matched with remote device.

D. Solid-State Controls: Repetitive accuracy of all settings is plus or minus 2 percent or better over an operating temperature range of minus 20 to plus 70 deg C.

E. Resistance to Damage by Voltage Transients: Components shall meet or exceed voltage-surge withstand capability requirements when tested according to IEEE C62.41. Components shall meet or exceed voltage-impulse withstand test of NEMA ICS 1.

F. Neutral Terminal: Switched, solid and fully rated.

G. Enclosures: General-purpose NEMA 250, Type 1, complying with NEMA ICS 6 and UL 508, unless otherwise indicated.

H. Factory Wiring: Train and bundle factory wiring and label, consistent with Shop Drawings, either by color code or by numbered or lettered wire and cable tape markers at terminations.

1. Designated Terminals: Pressure type suitable for types and sizes of field wiring indicated.
2. Power-Terminal Arrangement and Field-Wiring Space: Suitable for top, side, or bottom entrance of feeder conductors as indicated.
3. Control Wiring: Equipped with lugs suitable for connection to terminal strips.

I. Electrical Operation: Accomplish by a nonfused, momentarily energized solenoid or electric-motor-operated mechanism, mechanically and electrically interlocked in both directions.

J. Switch Characteristics: Designed for continuous-duty repetitive transfer of full-rated current between active power sources.

1. Switch Action: Double throw; mechanically held in both directions.
2. Contacts: Fully rated silver composition or silver alloy for load-current switching. Conventional automatic transfer-switch units, rated 225 A and higher, shall have separate arcing contacts.

2.3 Automatic Transfer Switches

A. Comply with Level 1 equipment according to NFPA 110.

B. Microprocessor based.

C. Switching Arrangement: Double-throw type, incapable of pauses or intermediate position stops during normal functioning, unless otherwise indicated.

D. Manual Switch Operation: Under load, with door closed and with either or both sources energized. Transfer time is same as for electrical operation. Control circuit automatically disconnects from electrical operator during manual operation.

E. Signal-Before-Transfer Contacts: A set of normally open/normally closed dry contacts operates in advance of retransfer to normal source. Interval is adjustable from 1 to 30 seconds.

F. Digital Communication Interface: Matched to capability of remote annunciator or annunciator and control panel.

2.4 Automatic Transfer-Switch Features

A. Undervoltage Sensing for Each Phase of Normal Source: Senses low phase-to-ground voltage on each phase. Pickup voltage is adjustable from 85 to 100 percent of nominal, and dropout voltage is adjustable from 75 to 98 percent of pickup value. Factory set for pickup at 90 percent and dropout at 85 percent.

B. Time delay for override of normal-source voltage sensing delays transfer and engine start signals. Adjustable from zero to six seconds, and factory set for one second.

C. Voltage/Frequency Lockout Relay: Prevents premature transfer to generator. Pickup voltage is adjustable from 85 to 100 percent of nominal. Factory set for pickup at 90 percent. Pickup frequency is adjustable from 90 to 100 percent of nominal. Factory set for pickup at 95 percent.

D. Time Delay for Retransfer to Normal Source: Adjustable from 0 to 30 minutes, and factory set for 10 minutes. Provides automatic defeat of delay on loss of voltage or sustained undervoltage of emergency source, provided normal supply has been restored.

E. Test Switch: Simulates normal-source failure.

F. Switch-Position Pilot Lights: Indicate source to which load is connected.

G. Source-Available Indicating Lights: Supervise sources via transfer-switch normal- and emergency-source sensing circuits.

1. Normal Power Supervision: Green light with nameplate engraved "Normal Source Available."
2. Emergency Power Supervision: Red light with nameplate engraved "Emergency Source Available."

H. Unassigned Auxiliary Contacts: Two normally open, single-pole, double-throw contacts for each switch position, rated 10 A at 240-V ac.

I. Transfer Override Switch: Overrides automatic retransfer control so automatic transfer switch will remain connected to emergency power source regardless of condition of normal source. Pilot light indicates override status.

J. Engine Starting Contacts: One isolated and normally closed, and one isolated and normally open; rated 10 A at 32-V dc minimum.

K. Engine Shutdown Contacts: Time delay adjustable from zero to five minutes, and factory set for five minutes. Contacts shall initiate shutdown at remote engine-generator controls after retransfer of load to normal source.

L. Engine-Generator Exerciser: Solid-state, programmable-time switch starts engine generator and transfers load to it from normal source for a preset time, then retransfers and shuts down engine after a preset cool-down period. Initiates exercise cycle at preset intervals adjustable from 7 to 30 days. Running periods are adjustable from 10 to 30 minutes. Factory settings are for 7-day exercise cycle, 20-minute running period, and 5-minute cool-down period. Exerciser features include the following:

1. Exerciser Transfer Selector Switch: Permits selection of exercise with and without load transfer.
2. Push-button programming control with digital display of settings.
3. Integral battery operation of time switch when normal control power is not available.

2.5 Bypass/Isolation Switches

A. Comply with requirements for Level 1 equipment according to NFPA 110.

B. Description: Manual type, arranged to select and connect either source of power directly to load, isolating transfer switch from load and from both power sources. Include the following features for each combined automatic transfer switch and bypass/isolation switch:

1. Means to lock the bypass/isolation switch in the position that isolates the transfer switch with an arrangement that permits complete electrical testing of transfer switch while isolated. While isolated, interlocks prevent transfer-switch operation, except for testing or maintenance.
2. Draw out Arrangement for Transfer Switch: Provides physical separation from live parts and accessibility for testing and maintenance operations.
3. Bypass/Isolation Switch Current, Voltage, Closing, and Short-Circuit Withstand Ratings: Equal to or greater than those of associated automatic transfer switch, and with same phase arrangement and number of poles.
4. Contact temperatures of bypass/isolation switches do not exceed those of automatic transfer-switch contacts when they are carrying rated load.
5. Operability: Constructed so load bypass and transfer-switch isolation can be performed by 1 person in no more than 2 operations in 15 seconds or less.
6. Legend: Manufacturer's standard legend for control labels and instruction signs give detailed operating instructions.
7. Maintainability: Fabricate to allow convenient removal of major components from front without removing other parts or main power conductors.

C. Interconnection of Bypass/Isolation Switches with Automatic Transfer Switches: Factory-installed copper bus bars; plated at connection points and braced for the indicated available short-circuit current.

2.6 Nonautomatic Transfer Switches

A. Operation: Electrically actuated by push buttons designated "Normal Source" and "Alternate Source." Switch is capable of transferring load in either direction with either or both sources energized.

B. Operation: Electrically actuated by push buttons designated "Normal Source" and "Alternate Source." In addition, removable manual handle provides quick-make, quick-break manual-switching action. Switch is capable of electrically or manually transferring load in either direction with either or both sources energized. Control circuit disconnects from electrical operator during manual operation.

C. Double-Throw Switching Arrangement: Incapable of pauses or intermediate position stops during switching sequence.

2.7 Nonautomatic Transfer-Switch Accessories

A. Pilot Lights: Indicate source to which load is connected.

B. Source-Available Indicating Lights: Supervise sources via transfer-switch normal- and alternate-source sensing circuits.

1. Normal Power Supervision: Green light with nameplate engraved "Normal Source Available."
2. Emergency Power Supervision: Red light with nameplate engraved "Alternate Source Available."

C. Unassigned Auxiliary Contacts: One set of normally closed contacts for each switch position, rated 10 A at 240-V ac.

2.8 Remote Annunciator System

A. Functional Description: Remote annunciator panel annunciates conditions for indicated transfer switches. Annunciation includes the following:

1. Sources available, as defined by actual pickup and dropout settings of transfer-switch controls.
2. Switch position.
3. Switch in test mode.
4. Failure of communication link.

B. Annunciator Panel: LED-lamp type with audible signal and silencing switch.

1. Indicating Lights: Grouped for each transfer switch monitored.
2. Label each group, indicating transfer switch it monitors, location of switch, and identity of load it serves.
3. Mounting: Flush, modular, steel cabinet, unless otherwise indicated.
4. Lamp Test: Push-to-test or lamp-test switch on front panel.

2.9 Remote Annunciator and Control System

A. Functional Description: Include the following functions for indicated transfer switches:

1. Indication of sources available, as defined by actual pickup and dropout settings of transfer-switch controls.
2. Indication of switch position.
3. Indication of switch in test mode.
4. Indication of failure of digital communication link.
5. Key-switch or user-code access to control functions of panel.
6. Control of switch-test initiation.
7. Control of switch operation in either direction.
8. Control of time-delay bypass for transfer to normal source.

B. Malfunction of annunciator, annunciation and control panel, or communication link shall not affect functions of automatic transfer switch. In the event of failure of communication link, automatic transfer switch automatically reverts to stand-alone, self-contained operation. Automatic transfer-switch sensing, controlling, or operating function shall not depend on remote panel for proper operation.

C. Remote Annunciation and Control Panel: Solid-state components. Include the following features:

1. Controls and indicating lights grouped together for each transfer switch.
2. Label each indicating light control group. Indicate the transfer switch it controls, location of switch, and load it serves.
3. Digital Communication Capability: Matched to that of transfer switches supervised.
4. Mounting: Flush, modular, steel cabinet, unless otherwise indicated.

2.10 Finishes

A. Enclosures: Manufacturer's polyester powder coat over corrosion-resistant pretreatment and primer.

2.11 Source Quality Control

A. Factory test and inspect components, assembled switches, and associated equipment. Ensure proper operation. Check transfer time and voltage, frequency, and time-delay settings for compliance with specified requirements. Perform dielectric strength test complying with NEMA ICS 1.

PART 3 - EXECUTION

3.1 Application

A. Four-Pole Switches: install neutral switching.

3.2 Installation

A. Floor-Mounted Switch: Anchor to floor by bolting.

1. Concrete Bases: 4 inches (100 mm) high, reinforced, with chamfered edges. Extend base no more than 2 inches (50 mm) in all directions beyond the maximum dimensions of switch, unless otherwise indicated. Cast anchor-bolt inserts into bases. Comply with Division 3 Section "Cast-in-Place Concrete."

B. Annunciator and Control Panel Mounting: Flush in wall, unless otherwise indicated.

C. Identify components according to Division 26 Section "Basic Electrical Materials and Methods."

3.3 Wiring To Remote Components

A. Match type and number of cables and conductors to control and communication requirements of transfer switches as recommended by manufacturer. Increase raceway sizes at no additional cost to Owner if necessary to accommodate required wiring.

3.4 Connections

A. Ground equipment according to Division 26 Section "Grounding and Bonding."

B. Connect wiring according to Division 26 Section "Conductors and Cables."

C. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A.

3.5 Field Quality Control

A. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect, test, and adjust field-assembled components and equipment installation, including connections, and to assist in field testing. Report results in writing.

B. Perform the following field tests and inspections and prepare test reports:

1. After installing equipment and after electrical circuitry has been energized, test for compliance with requirements.
2. Perform each electrical test and visual and mechanical inspection stated in NETA ATS, Section 7.22.3. Certify compliance with test parameters.
3. Measure insulation resistance phase-to-phase and phase-to-ground with insulation-resistance tester. Include external annunciation and control circuits. Use test voltages and procedure recommended by manufacturer. Comply with manufacturer's specified minimum resistance.
    a. Check for electrical continuity of circuits and for short circuits.
    b. Inspect for physical damage, proper installation and connection, and integrity of barriers, covers, and safety features.
    c. Verify that manual transfer warnings are properly placed.
    d. Perform manual transfer operation.
4. After energizing circuits, demonstrate interlocking sequence and operational function for each switch at least three times.
    a. Simulate power failures of normal source to automatic transfer switches and of emergency source with normal source available.
    b. Simulate loss of phase-to-ground voltage for each phase of normal source.
    c. Verify time-delay settings.
    d. Verify pickup and dropout voltages by data readout or inspection of control settings.
    e. Test bypass/isolation unit functional modes and related automatic transfer-switch operations.

f. Verify proper sequence and correct timing of automatic engine starting, transfer time delay, retransfer time delay on restoration of normal power, and engine cool-down and shutdown.

C. Coordinate tests with tests of generator and run them concurrently.

D. Report results of tests and inspections in writing. Record adjustable relay settings and measured insulation and contact resistances and time delays. Attach a label or tag to each tested component indicating satisfactory completion of tests.

E. Remove and replace malfunctioning units and retest as specified above.

3.6 Demonstration

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain transfer switches and related equipment as specified below.

1. Coordinate this training with that for generator equipment.

END OF SECTION

DRAWINGS

JAGUAR CONSULTING
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MPD TRAFFIC SAFETY UNIT
EMERGENCY GENERATOR

FOR

the City of
Mobile, Alabama

PD-003-25

850 VIRGINIA STREET
Mobile, Alabama 36603

BY

dell consulting
Electrical Engineering
Alabama Certificate Number CA-4146-E
813 Downtowner Blvd., Suite D
Mobile, AL 36609
P: 251-316-0015 F: 850-453-6612
Dell Consulting project: 24-135

SUMMARY OF WORK

THE SCOPE OF WORK INCLUDES:

REMOVAL OF EXISTING GENERATOR AND ASSOCIATED CABLES, CONDUIT, BOXES, ETC.. GENERATOR TO BE TURNED OVER TO OWNER.

PROCUREMENT AND INSTALLATION OF A NEW 80 KW NATURAL GAS GENERATOR.

THE FURNISHING AND INSTALLATION OF (2) NEW 200A NEMA 3R SERVICE ENTRANCE RATED AUTOMATIC TRANSFER SWITCHES.

CURRENTLY THE OFFICE SWITCHBOARD SERVES BOTH THE OFFICE AND THE SHOP BUILDINGS - SCOPE INCLUDES MODIFYING EXISTING CIRCUITS TO SEPARATE THE OFFICE AND SHOP BUILDINGS TO EACH HAVE INDEPENDENT SERVICES.

NEW GAS SERVICE SHALL BE PROVIDED TO ACCOMMODATE THE LOAD OF THE NEW GENERATOR. CONTRACTOR SHALL COORDINATE WITH UTILITY PROVIDER TO PROVIDE GAS SERVICE / METER TO SERVE GENERATOR. GAS PIPING SHALL BE ROUTED UNDERGROUND FROM NEW METER TO THE LOCATION OF THE NEW GENERATOR.

AS AN ADD ALTERNATE THE ELECTRICAL CONTRACTOR SHALL PROVIDE A COST TO REMOVE THE EXISITNG SWITCHBOARD AND PROVIDE AND INSTALL A NEW 400A (200A MCB) 208Y/120 VOLT PANEL TO REPLACE THE SWITCH BOARD. THE COST IS TO INCLUDE ALL WORK ASSOCIATED WITH THE REMOVAL OF THE EXISITNG EQUIPMENT, INSTALLATION OF NEW EQUIPMENT AND THE RECONNECTION OF ALL EXISTING LOADS TO REMAIN.

N

1 OVERALL SITE MAP
NOT TO SCALE

INDEX OF DRAWINGS

DRAWING #	DRAWING DESCRIPTION:
T1.0	TITLE SHEET
P0.1	LEGEND, NOTES, SPECIFICATIONS, AND ABBREVIATIONS
P1.0	PLUMBING SITE PLAN
P2.0	PLUMBING NEW WORK PLAN
E1.0	ELECTRICAL LEGEND, ABBREVIATIONS & SPECIFICATIONS
E2.0	ELECTRICAL SITE PLAN
E3.0	EXISTING ELECTRICAL PLAN
E4.0	NEW WORK ELECTRICAL PLAN
E5.0	ELECTRICAL RISER AND SCHEDULES
E6.0	ELECTRICAL DETAILS AND SCHEDULES

SUBMITTAL

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DELL CONSULTING PROJECT: 24-136

ALABAMA LICENSED No. 50660 PROFESSIONAL ENGINEER CHRISTINA MARIE

NUMBER REVISION	REVISION DESCRIPTION

PD-003-25 MDP TRAFFIC SAFETY UNIT
EMERGENCY GENERATOR
850 VIRGINIA STREET MOBILE, ALABAMA 36603

DESIGNED BY: CM
DRAWN BY: CM
CHECKED BY: AWM
DATE: 01-10-2024

SHEET TITLE: TITLE SHEET

SHEET: T1.0

ELECTRICAL LEGEND

GENERAL ELECTRICAL DEVICES:

DUPLEX RECEPTACLE NEMA 5-20R. MOUNT 18" AFF UNLESS NOTED OTHERWISE. VERIFY DUPLEX MOUNTING REQUIREMENTS WITH ARCHITECTURAL DRAWINGS PRIOR TO ROUGH-IN. SUBSCRIPT INDICATES AS FOLLOWS:
G - GROUND FAULT CIRCUIT INTERRUPTER TYPE.
WP - GFI DEVICE WITH DIECAST WEATHERPROOF BACKBOX & CLEAR WEATHERPROOF (IN-USE) COVERPLATE. IN EXTERIOR LOCATIONS MOUNT 30" AFG.
84" - MOUNTING HEIGHT OF DEVICE AFF.
21 - # INDICATES PANELBOARD CKT NUMBER

MAINTAINED OPERATOR PUSHBUTTON STATIONS. RED BUTTON IN STEEL NEMA 1 ENCLOSURE AT 48" AFF. PROVIDE WITH PHENOLIC NAMEPLATE. FLUSH MOUNTED IN FINISHED AREAS.

MISCELLANEOUS EQUIPMENT:

EMERGENCY GENERATOR REMOTE ANNUNCIATOR. FLUSH MOUNTED AT 5'0" AFF.

COPPER GROUNDING BUSBAR WITH STANDOFF INSULATORS. UNLESS INDICATED OTHERWISE PROVIDE WITH #6AWG IN EMT FROM BUSBAR TO EMGB. MOUNT BUSBAR 12" AFF.

ELECTRICAL CONNECTION TO EQUIPMENT. VERIFY LOCATION WITH EQUIPMENT PROVIDER.

DISTRIBUTION & POWER EQUIPMENT:

PANELBOARD. MOUNT AS INDICATED. SEE PANELBOARD SCHEDULES.

DISTRIBUTION PANELBOARD. MOUNT AS INDICATED. SEE PANELBOARD SCHEDULES.

SWITCHBOARD, SWITCHGEAR OR MCC. MOUNT ON CONCRETE HOUSEKEEPING PAD AS INDICATED. SEE PANELBOARD SCHEDULES.

NEC 110.26(A) WORKING CLEARANCE.

AUTOMATIC TRANSFER SWITCH.

NON-FUSED HEAVY DUTY SAFETY SWITCH. SIZE FOR LOAD BEING SERVED.

FUSED HEAVY DUTY SAFETY SWITCH. SIZE FOR LOAD BEING SERVED.

OTHER:

CIRCUIT RUN CONCEALED ABOVE CEILING OR IN WALL.

CIRCUIT RUN CONCEALED IN OR BELOW FLOOR SLAB OR UNDERGROUND.

2P2-9 — HOMERUN TO PANELBOARD. ANY CIRCUIT WITHOUT FURTHER DESIGNATION SHALL BE 2#12,#12G,3/4"C. TICK MARKS INDICATE # OF CONDUCTORS (EGC NOT SHOWN). MINIMUM SIZE ON 120V HOMERUNS GREATER THAN 50 FEET SHALL BE #10 AWG. MINIMUM SIZE ON 120V HOMERUNS GREATER THAN 100 FEET SHALL BE #8 AWG. MINIMUM SIZE ON 120V HOMERUNS GREATER THAN 160 FEET SHALL BE #6 AWG. MINIMUM SIZE ON 277V HOMERUNS GREATER THAN 100 FEET SHALL BE #10 AWG. INCREASE CONDUIT SIZE AS REQUIRED PER NEC. UNDERLINED TEXT INDICATES CIRCUIT DESIGNATION.

1 — SHEET NOTE TAG.

4LP1 — PANELBOARD, SWITCHBOARD, TRANSFORMER & ELECTRICAL EQUIPMENT IDENTIFICATION TAG.

LEADERS.

ELECTRICAL SPECIFICATIONS

1. GENERAL ELECTRICAL:
 1.1. THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY FOR THE INSTALLATION OF A COMPLETE ELECTRICAL SYSTEM AS INDICATED WITHIN THESE DRAWINGS. ALL WORK SHALL BE INSTALLED IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES AND ORDINANCES AND WITH MANUFACTURER'S RECOMMENDATIONS.
 1.2. THE CONTRACTOR SHALL CAREFULLY EXAMINE THE ARCHITECTURAL, STRUCTURAL, ELECTRICAL AND MECHANICAL DRAWINGS PRIOR TO SUBMITTING HIS BID. THE CONTRACTOR WILL BE REQUIRED TO FURNISH, INSTALL AND CONNECT ALL ITEMS AS INDICATED ON THE DRAWINGS.
 1.3. THE ARCHITECT SHALL BE NOTIFIED OF ANY CONFLICTS, OR INTERFERENCES THAT OCCUR BETWEEN INDIVIDUAL DRAWINGS.
 1.4. ALL MATERIALS AND EQUIPMENT SHALL BE INSTALLED IN A NEAT, FIRST CLASS, WORKMANLIKE MANNER, TO THE APPROVAL OF THE ARCHITECT/ENGINEER AND GOVERNING AUTHORITIES.
 1.5. IN ADDITION TO THE MANUFACTURERS STANDARD GUARANTEES, THE CONTRACTOR SHALL GUARANTEE ALL MATERIALS, EQUIPMENT AND WORKMANSHIP AGAINST DEFECTS FOR ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE, AND SHALL CORRECT ANY DEFECTS AT NO ADDITIONAL COST TO THE OWNER. ALL LAMPS SHALL BE GUARANTEED FOR 30 DAYS AFTER ACCEPTANCE.
 1.6. THE LOADS SHOWN FOR APPLIANCES AND EQUIPMENT ARE BASED ON DESIGN INFORMATION. THE CONTRACTOR SHALL VERIFY ALL APPLIANCE LOADS PRIOR TO RUNNING THE CIRCUIT. THE MINIMUM CIRCUIT REQUIREMENTS SHALL BE BASED ON THE APPLIANCE NAMEPLATE VALUE OR CODE REQUIREMENTS, WHICHEVER IS MORE STRINGENT. ADDITIONAL COMPENSATION SHALL NOT BE ALLOWED FOR APPLIANCE MODIFICATIONS BY THE CONTRACTOR.
 1.7. PRIOR APPROVAL: PRIOR APPROVAL SHALL BE REQUIRED FOR ANY MANUFACTURER OTHER THAN THOSE LISTED FOR ALL SPECIFIED ITEMS IN THESE DRAWINGS. SUBMIT ALL REQUESTS FOR PRIOR APPROVAL 2 WEEKS PRIOR TO BID OPENING. ENGINEER'S APPROVAL WILL BE IN THE FORM OF AN ADDENDUM.

2. CODES & STANDARDS:
 2.1. INSTALLATION AND MATERIALS SHALL COMPLY WITH THE LATEST ADOPTED EDITION OF THE FOLLOWING CODES & STANDARDS:
  2.1.1. NATIONAL ELECTRICAL CODE.
  2.1.2. NFPA 72. NATIONAL FIRE PROTECTION CODE.
  2.1.3. INTERNATIONAL BUILDING CODE.
  2.1.4. INTERNATIONAL ENERGY CONSERVATION CODE.
  2.1.5. NFPA 101.
  2.1.6. ADA .
  2.1.7. ANSI.
  2.1.8. NEMA.
  2.1.9. OSHA.
  2.1.10. UL.

3. ALTERATIONS & ADDITIONS TO EXISTING WORK:
 3.1. PROVIDE ALL NECESSARY ADDITIONS AND ALTERATIONS TO EXISTING WORK AS REQUIRED TO PROVIDE AND MAINTAIN A COMPLETE AND PROPER ELECTRICAL INSTALLATION.
 3.2. AS NECESSARY, RELOCATE EXISTING ELECTRICAL WORK SO OTHER TRADES CAN PURSUE THEIR WORK.
 3.3. MAINTAIN POWER TO EXISTING PORTIONS OF BUILDINGS FED FROM OR THROUGH AREA IN SCOPE OF THIS CONTRACT.
 3.4. COORDINATE ALL REQUIRED OUTAGES WITH OWNER.

4. BASIC MATERIALS & METHODS:
 4.1. ALL POWER AND DISTRIBUTION CABLING SHALL BE COPPER TYPE THWN/THHN.
 4.2. ALL ELECTRICAL EQUIPMENT, DEVICES, ETC. LOCATED OUTDOORS SHALL BE WEATHERPROOF.
 4.3. ELECTRICAL CONTRACTOR SHALL PROVIDE ADEQUATE AND PROPER SUPPORT FOR ALL ELECTRICAL OUTLETS, DEVICES, LIGHT FIXTURES, ETC. BUILT IN OR MOUNTED ON CEILINGS. NO OUTLET BOX, DEVICE, LIGHT FIXTURE, ETC. SHALL BE SUPPORTED FROM ANY ACOUSTICAL CEILING TILE OR DRYWALL CEILINGS. PROVIDE METAL SUPPORTS THAT ARE MADE FOR USE WITH CEILING GRID SYSTEMS OR PROVIDE HANGERS FROM STRUCTURE ABOVE.
 4.4. CONDUIT ROUTINGS AND DEVICE/EQUIPMENT LOCATIONS SHOWN ARE DIAGRAMMATIC ONLY, CONTRACTOR SHALL FIELD ROUTE AND LOCATE AS REQUIRED. CONDUIT ROUTINGS SHALL BE PARALLEL OR PERPENDICULAR TO BUILDING LINES.
 4.5. JUNCTION BOXES LOCATED ABOVE CEILING SHALL BE INSTALLED FACING DOWN AND SHALL BE ACCESSIBLE AFTER INSTALLATION.
 4.6. COORDINATE ALL ELECTRICAL WORK WITH OTHER TRADES AND STRUCTURAL COMPONENTS.
 4.7. THE CONDUIT MATERIAL SHALL BE AS FOLLOWS:
  4.7.1. BELOW GRADE - RNC (POWER & SITE LIGHTING ONLY). ELBOWS >1-1/2" SHALL BE RGS.
  4.7.2. RISER FROM 36" BELOW GRADE - RGS.
  4.7.3. CONCEALED RISER FROM 36" BELOW GRADE - RNC (POWER ONLY).
  4.7.4. ABOVE GRADE SUBJECT TO PHYSICAL ABUSE - RGS.
  4.7.5. ABOVE GRADE NOT SUBJECT TO PHYSICAL ABUSE OR WEATHER - EMT.
  4.7.6. INDOORS NOT SUBJECT TO PHYSICAL ABUSE - EMT. OR METAL CLAD CABLE(AS ALLOWED BY LOCAL AUTHORITY HAVING JURISDICTION).
  4.7.7. FINAL CONDUIT CONNECTIONS TO HEAT PUMPS, AIR HANDLERS, EXHAUST FANS, AND WATER HEATERS SHALL BE LFMC WHETHER INTERIOR OR EXTERIOR.
 4.8. CONDUIT FITTINGS SHALL BE AS FOLLOWS:
  4.8.1. EMT - <=2" USE STEEL SET SCREW WITH INSULATED THROATS FOR INTERIOR/ USE COMPRESSION FITTINGS WITH INSULATED THROATS FOR EXTERIOR, >2" USE SET-SCREW STEEL WITH INSULATED THROATS.
  4.8.2. RGS - THREADED GALVANIZED STEEL.
  4.8.3. PVC - PVC APPROVED FOR THE USE.
  4.8.4. FMC - ZINC-PLATED STEEL OR CADMIUM-PLATED MALLEABLE IRON SCREW TYPE WITH INSULATED THROAT.
  4.8.5. LFMC - CADMIUM-PLATED MALLEABLE IRON OR STEEL COMPRESSION TYPE WITH INSULATED THROAT.
 4.9. ALL OUTLET BOXES SHALL BE 4"X4"X1-1/2" DEEP MINIMUM.
 4.10. ELECTRICAL CONTRACTOR SHALL WORK CLOSELY WITH THE MASONRY CONTRACTOR ON THE INSTALLATION OF ALL ELECTRICAL BOXES, CABINETS, RINGS, ETC. IN MASONRY WALLS. THE BOXES SHALL BE INSTALLED AT THE UNIFORM HEIGHTS CALLED FOR ON THE DRAWINGS AND SPECIFICATIONS. PROVIDE APPROPRIATE DEPTH MASONRY RINGS FOR ALL OUTLETS IN MASONRY WALLS TO INSURE PROPER CUTTING AND FITTING. THE FACE OF THE CABINETS, BOXES, RINGS, ETC. SHALL BE PLUMB AND FLUSH WITH THE FACE OF THE FINISH MATERIAL. ANY CABINET, OUTLET BOX, ETC. NOT MEETING THE ABOVE REQUIREMENT SHALL BE REMOVED AND REINSTALLED AT NO ADDITIONAL COST TO THE OWNER.
 4.11. ALL SIDEWALKS AND PARKING LOT ASPHALT AREAS THAT ARE CUT DUE TO NEW ELECTRICAL SERVICES SHALL BE REPAIRED TO MATCH EXISTING.
 4.12. ALL DIMENSIONS TO DEVICES AFF SHALL BE TO CENTERLINE UNLESS NOTED OTHERWISE.
 4.13. WALL OUTLETS SHALL NOT BE INSTALLED BACK TO BACK.
 4.14. COORDINATE LOCATIONS OF ELECTRICAL EQUIPMENT, DEVICES, OUTLETS, FIXTURES, ETC., WITH ARCHITECTURAL PLANS, ELEVATIONS AND REFLECTED CEILING PLANS PRIOR TO ROUGH-IN WORK.

5. GROUNDING & BONDING:
 5.1. PROVIDE AN INSULATED EQUIPMENT GROUNDING CONDUCTOR IN ALL CONDUITS.
 5.2. GROUND RODS SHALL BE 3/4"X20' COPPERCLAD STEEL.
 5.3. BELOW GRADE CONNECTIONS SHALL BE EXOTHERMIC TYPE.
 5.4. ALL CABLES SHALL BE COPPER, ALL BOLTED CONNECTIONS SHALL BE BRONZE.
 5.5. PROVIDE A #6AWG MINIMUM GROUND IN EMT FROM EACH TELCOM BACKBOARD TO THE MAIN ELECTRICAL SERVICE GROUND.
 5.6. WHERE AVAILABLE, BOND TO BUILDING STRUCTURAL STEEL, BUILDING FOUNDATION STEEL, METAL WATER SERVICE PIPING.
 5.7. PROVIDE THREE 20' GROUND RODS IN TRIANGLE ARRANGEMENT ON 20' CENTERS FOR MADE ELECTRODE SYSTEM. MEASURE RESISTANCE AND ENSURE <25 OHMS.

6. IDENTIFICATION:
 6.1. PROVIDE ENGRAVED 1"X3" PHENOLIC LABELS FOR ALL PANELBOARDS, SAFETY SWITCHES, TRANSFORMERS, CABINETS, ETC.
 6.2. PAINT THE RACEWAY SYSTEM COUPLINGS AND BOX COVERS ABOVE CEILINGS FOR THE FOLLOWING SYSTEMS AS FOLLOWS:
  6.2.1. 208 VOLT SYSTEMS - BLACK.
  6.2.2. AFTER PAINTING, WRITE THE CIRCUIT NUMBER (I.E. "LPA-34") ON ALL BRANCH CIRCUIT JUNCTION BOX COVERS ABOVE CEILING WITH WHITE MARKER.

7. GENERAL WIRING DEVICES:
 7.1. SWITCHES - SPECIFICATION GRADE, 20 AMP, COLOR BY ARCHITECT.
 7.2. RECEPTACLES - SPECIFICATION GRADE, 20 AMP, NEMA 5-20R, COLOR BY ARCHITECT.
 7.3. COVER PLATES - NYLON, COLOR BY ARCHITECT.
 7.4. SPECIAL RECEPTACLES - PER THE DRAWINGS, VERIFY WITH EQUIPMENT BEING SUPPLIED.
 7.5. APPROVED MANUFACTURERS - HUBBELL, LEVITON, EAGLE, PASS & SEYMOUR.

8. SAFETY SWITCHES:
 8.1. HEAVY DUTY, VISIBLE BLADE, LOCKABLE, QUICK-MAKE/QUICK-BREAK, HORSEPOWER RATED, FUSED WHERE INDICATED.
 8.2. PROVIDE WITH GROUND LUG KIT.
 8.3. INTERIOR - NEMA 1.
 8.4. EXTERIOR - NEMA 3R.
 8.5. APPROVED MANUFACTURERS - SQUARE D, GENERAL ELECTRIC, SIEMENS.

9. MOTOR STARTERS:
 9.1. MANUAL TYPE SHALL BE TOGGLE WITH THERMAL OVERLOAD.
 9.2. MAGNETIC TYPE SHALL HAVE SOLID STATE OVERLOAD RELAY WITH Ø LOSS AND Ø UNBALANCE PROTECTION, HOA SWITCH, RED RUN AND GREEN STOP LED LIGHTS.
 9.3. INTERIOR - NEMA 1.
 9.4. EXTERIOR - NEMA 3R.
 9.5. APPROVED MANUFACTURERS - SQUARE D, GENERAL ELECTRIC, SIEMENS.

10. PANELBOARDS:
 10.1. FRONT ACCESSIBLE, BOLT-ON MOLDED CASE C/Bs, COPPER PHASE & NEUTRAL BUSSING, COPPER GROUND BAR, FULLY RATED (SERIES RATING NOT ALLOWED).
 10.2. ENCLOSURES SHALL BE DOOR-IN-DOOR CONSTRUCTION.
 10.3. INTERIOR - NEMA 1.
 10.4. ALL INTERIOR PANELBOARDS ARE TO HAVE FOUR SPARE 3/4" CONDUITS INSTALLED TO AN ACCESSIBLE SPACE FOR FUTURE.
 10.5. EXTERIOR - NEMA 3R.
 10.6. PROVIDE TYPE-WRITTEN DIRECTORY IN CLEAR SLEEVE ON INSIDE OF DOOR.
 10.7. APPROVED MANUFACTURERS - SQUARE D, GENERAL ELECTRIC, SIEMENS.

ABBREVIATIONS

A	AMPS	MCM	THOUSAND CIRCULAR MILS
AC	ABOVE COUNTER	MH	MANHOLE
AF	AMP FRAME	MIN	MINIMUM
AFF	ABOVE FINISHED FLOOR	MISC	MISCELLANEOUS
AFG	ABOVE FINISHED GRADE	MLO	MAIN LUGS ONLY
AHU	AIR HANDLING UNIT	MNT	MOUNTING HEIGHT
AL	ALUMINUM	MTG	MOUNTING
ARCH	ARCHITECT OR ARCHITECTURAL	MTS	MANUAL TRANSFER SWITCH
AT	AMP TRIP	MV	MEDIUM VOLTAGE
ATS	AUTOMATIC TRANSFER SWITCH	N1	NEMA 1
ATU	AIR TERMINAL UNIT	N3R	NEMA 3R
AWG	AMERICAN WIRE GAUGE	N/A	NOT APPLICABLE
BAS	BUILDING AUTOMATION SYSTEM	NA	NOT APPLICABLE
BJ	BONDING JUMPER	NEC	NATIONAL ELECTRICAL CODE
BKR	CIRCUIT BREAKER	NESC	NATIONAL ELECTRICAL SAFETY CODE
BLDG	BUILDING	NEU	NEUTRAL
BOD	BASIS OF DESIGN	OCPD	OVERCURRENT PROTECTION DEVICE
C	CONDUIT	OFOI	OWNER FURNISHED OWNER INSTALLED
C/B	CIRCUIT BREAKER	OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
CL	CURRENT LIMITING	OH	OVERHEAD
C/L	CENTERLINE	OHE	OVERHEAD ELECTRIC
CLG	CEILING	OHP	OVERHEAD PRIMARY
CKT	CIRCUIT	OHS	OVERHEAD SECONDARY
CT	CURRENT TRANSFORMER	PBD	PANELBOARD
CU	COPPER	PF	POWER FACTOR
DDC	DIRECT DIGITAL CONTROL	PNL	PANELBOARD
DEMO	DEMOLISH	PT	POTENTIAL TRANSFORMER
EC	ELECTRICAL CONTRACTOR	PWR	POWER
EGC	EQUIPMENT GROUNDING CONDUCTOR	RCPT	RECEPTACLE
ELEC	ELECTRICAL	REQD	REQUIRED
EMGB	ELECTRICAL MAIN GROUNDING BUSBAR	RM	ROOM
EF	EXHAUST FAN	RGS	RIGID GALVANIZED STEEL CONDUIT
EX	EXISTING TO REMAIN	RNC	RIGID NON-METALLIC CONDUIT
EXT	EXTERIOR	RVSS	REDUCED VOLTAGE SOLID STATE
EWC	ELECTRIC WATER COOLER	SA	SURGE ARRESTER
EMT	ELECTRICAL METALLIC TUBING	SCA	SHORT CIRCUIT AMPS
EQUIP	EQUIPMENT	SF	SUPPLY FAN
FMC	FLEXIBLE METAL CONDUIT	SPEC	SPECIFICATION
FACP	FIRE ALARM SYSTEM CONTROL PANEL	SWBD	SWITCHBOARD
FU	FUSE	SWGR	SWITCHGEAR
F/A	FIRE ALARM	TBB	TELECOMMUNICATIONS BONDING BACKBONE
FLA	FULL LOAD AMPS	TR	TELECOMMUNICATIONS ROOM
FLR	FLOOR	TGB	TELECOMMUNICATIONS GROUNDING BUSBAR
FVNR	FULL VOLTAGE NON-REVERSING	TMGB	TELECOMMUNICATIONS MAIN GROUNDING BUSBAR
GFI	GROUND FAULT INTERRUPTER	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION
G	GROUND (OR GFI FOR RECEPTACLE SUBSCRIPT)	TYP	TYPICAL
GC	GENERAL CONTRACTOR	UFR	UNDERFLOOR RACEWAY
GND	GROUND	UG	UNDERGROUND
GEC	GROUNDING ELECTRODE CONDUCTOR	UGE	UNDERGROUND ELECTRIC
HH	HANDHOLE	UGP	UNDERGROUND PRIMARY
HOA	HAND-OFF-AUTOMATIC	UGS	UNDERGROUND SECONDARY
HP	HEAT PUMP OR HORSEPOWER	UL	UNDERWRITERS' LABORATORIES
HVAC	HEATING, VENTILATION & AIR-CONDITIONING	UNO	UNLESS NOTED OTHERWISE
IG	ISOLATED GROUND	UPS	UNINTERRUPTIBLE POWER SUPPLY
IMC	INTERMEDIATE METAL CONDUIT	V	VOLT
JB	JUNCTION BOX	VA	VOLT-AMPERES
k	KILO	VAR	VOLT-AMPERES REACTIVE
kAIC	KILO-AMPERE INTERRUPTING CAPABILITY	VAV	VARIABLE AIR VOLUME UNIT
kCMIL	THOUSAND CIRCULAR MILS	W	WATTS
LCP	LIGHTING CONTROL PANEL	WAO	WORK AREA OUTLET
LTG	LIGHTING	WP	WEATHERPROOF
LFMC	LIQUID TIGHT FLEXIBLE METAL CONDUIT	WSR	WITHSTAND RATING
LV	LOW VOLTAGE	XFMR	TRANSFORMER
MAX	MAXIMUM	XP	EXPLOSION PROOF
MCA	MINIMUM CIRCUIT AMPACITY	ϕ	PHASE
MCC	MOTOR CONTROL CENTER	72°	DEGREES
MCE	MAIN COMMUNICATIONS EQUIPMENT ROOM	Δ	DELTA
		Ω	OHMS

SUBMITTAL

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DELL CONSULTING PROJECT: 24-136

ALABAMA LICENSED PROFESSIONAL ENGINEER No. 50660 CHRISTINA MARIE JAGUAR

REVISION DESCRIPTION | NUMBER REVISION

PD-003-25 MDP TRAFFIC SAFETY UNIT
EMERGENCY GENERATOR
850 VIRGINIA STREET MOBILE, ALABAMA 36603

DESIGNED BY: CM
DRAWN BY: CM
CHECKED BY: AWM
DATE: 01-10-2024

SHEET TITLE: ELECTRICAL LEGEND, ABBREVIATIONS AND SPECIFICATIONS

SHEET: E1.0

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SHEET TITLE:
ELECTRICAL SITE PLAN

SHEET:
E2.0

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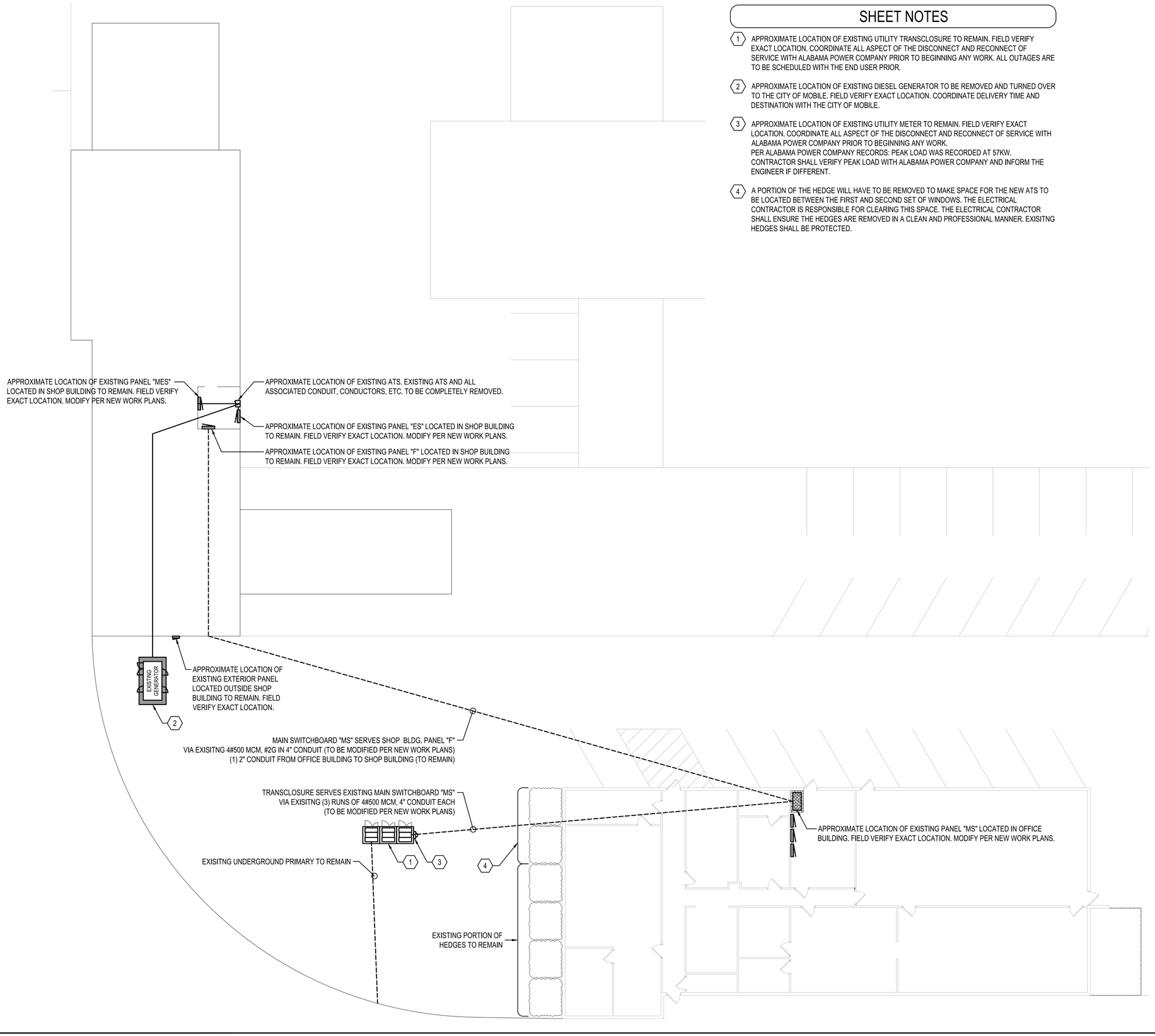
SHEET NOTES

1. APPROXIMATE LOCATION OF EXISTING UTILITY TRANSCLOSURE TO REMAIN. FIELD VERIFY EXACT LOCATION. COORDINATE ALL ASPECT OF THE DISCONNECT AND RECONNECT OF SERVICE WITH ALABAMA POWER COMPANY PRIOR TO BEGINNING ANY WORK. ALL OUTAGES ARE TO BE SCHEDULED WITH THE END USER PRIOR.
2. APPROXIMATE LOCATION OF EXISTING DIESEL GENERATOR TO BE REMOVED AND TURNED OVER TO THE CITY OF MOBILE. FIELD VERIFY EXACT LOCATION. COORDINATE DELIVERY TIME AND DESTINATION WITH THE CITY OF MOBILE.
3. APPROXIMATE LOCATION OF EXISTING UTILITY METER TO REMAIN. FIELD VERIFY EXACT LOCATION. COORDINATE ALL ASPECT OF THE DISCONNECT AND RECONNECT OF SERVICE WITH ALABAMA POWER COMPANY PRIOR TO BEGINNING ANY WORK.
   PER ALABAMA POWER COMPANY RECORDS: PEAK LOAD WAS RECORDED AT 57KW.
   CONTRACTOR SHALL VERIFY PEAK LOAD WITH ALABAMA POWER COMPANY AND INFORM THE ENGINEER IF DIFFERENT.
4. A PORTION OF THE HEDGE WILL HAVE TO BE REMOVED TO MAKE SPACE FOR THE NEW ATS TO BE LOCATED BETWEEN THE FIRST AND SECOND SET OF WINDOWS. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR CLEARING THIS SPACE. THE ELECTRICAL CONTRACTOR SHALL ENSURE THE HEDGES ARE REMOVED IN A CLEAN AND PROFESSIONAL MANNER. EXISITNG HEDGES SHALL BE PROTECTED.



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SHEET TITLE: EXISTING ELECTRICAL PLAN

SHEET: E3.0

PLUMBING CODES AND STANDARDS

1. GENERAL

1.1. THE WORK CONSISTS OF PROVIDING ALL LABOR, EQUIPMENT, AND MATERIALS AND PERFORMING ALL OPERATIONS NECESSARY FOR THE INSTALLATION OF THE PLUMBING WORK AS HEREIN CALLED FOR AND SHOWN ON THE DRAWINGS.

2. CODES

2.1. ALL WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CODES LISTED HEREIN. THE DESIGN HAS BEEN BASED ON THE REQUIREMENTS OF THESE CODES; AND WHILE IT IS NOT THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THAT ALL WORK CALLED FOR COMPLIES WITH THESE CODES, THE CONTRACTOR SHALL BE RESPONSIBLE FOR CALLING TO THE ARCHITECT/ENGINEER'S ATTENTION ANY DRAWINGS OR SPECIFICATIONS THAT ARE NOT IN CONFORMANCE WITH THESE OR OTHER CODES PRIOR TO ORDERING EQUIPMENT OR INSTALLING WORK.
2.2. COMPLY WITH REGULATIONS AND CODES OF UTILITY SUPPLIERS.
2.3. WHERE NO SPECIFIC METHOD OR FORM OF CONSTRUCTION IS CALLED FOR IN THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL COMPLY WITH CODE REQUIREMENTS WHEN CARRYING OUT SUCH WORK.
2.4. WHERE CODE CONFLICT EXISTS, GENERALLY THE MOST RESTRICTIVE REQUIREMENT APPLIES. COMPLY WITH CURRENT CODE EDITION, UNLESS NOTED.
2.5. ADDITIONAL CODES OR STANDARDS APPLYING TO A SPECIFIC PART OF THE WORK MAY BE INCLUDED IN THAT SECTION.
2.6. THE LATEST APPLICABLE VERSION OF THE FOLLOWING CODES GOVERN THE WORK:
- 2.6.1. UNIFORM FIRE CODE (NFPA 1)
- 2.6.2. NATIONAL ELECTRIC CODE (NFPA 70)
- 2.6.3. LIFE SAFETY CODE (NFPA 101)
- 2.6.4. INTERNATIONAL PLUMBING CODE
- 2.6.5. INTERNATIONAL FUEL GAS CODE
- 2.6.6. INTERNATIONAL FIRE CODE

3. STANDARDS

3.1. ALL MATERIALS, INSTALLATION, AND SYSTEMS SHALL MEET THE REQUIREMENTS OF THE FOLLOWING STANDARDS, INCLUDING THE LATEST ADDENDA AND AMENDMENTS, TO THE EXTENT REFERENCED:
- 3.1.1. UNDERWRITERS' LABORATORIES (UL)
- 3.1.2. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)
- 3.1.3. AMERICAN SOCIETY OF TESTING MATERIALS (ASTM)
- 3.1.4. NATIONAL FIRE PROTECTION (NFPA)
- 3.1.5. NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)

PLUMBING ABBREVIATIONS

AFF	ABOVE FINISH FLOOR
ADA	AMERICANS WITH DISABILITIES ACT
BTU	BRITISH THERMAL UNITS
EX	EXISTING
G	GAS
HP	HORSEPOWER
HR	HOUR
IN	INCH
MAX	MAXIMUM
MBH	THOUSAND BTU PER HOUR
MIN	MINIMUM
NTS	NOT TO SCALE
PSI	POUNDS PER SQUARE INCH
TYP	TYPICAL

PLUMBING LEGEND & SYMBOLS

- 2"-G — GAS (ABOVE GRADE)
- 2"-G — GAS (BELOW GRADE)
- PIPE DOWN
- PIPE UP
- (1) SHEET NOTES TAG
- CONNECT TO EXISTING

PLUMBING GENERAL NOTES

1. THE CONTRACTOR SHALL EXECUTE ALL WORK SO THAT IT PROCEEDS WITH MINIMUM INTERFERENCE TO OTHER TRADES.
2. DRAWINGS ARE DIAGRAMMATIC AND SHALL NOT BE SCALED. THE CONTRACTOR SHALL VERIFY THE ACTUAL DIMENSIONS IN THE FIELD TO ENSURE A CLOSE, NEAT INSTALLATION WITH ALL OTHER TRADES' WORK AND EXISTING CONDITIONS.
3. THE CONTRACTOR SHALL COORDINATE THE ROUTING AND LOCATIONS OF ALL PLUMBING UTILITIES WITH OTHER TRADES AND COORDINATE ALL REQUIRED OPENINGS AND EXCAVATIONS.
4. PROVIDE DI-ELECTRIC UNIONS AT ALL DISSIMILAR METAL PIPE CONNECTIONS.

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ENGINEER
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PLUMBING SPECIFICATIONS

SECTION 221700 - GAS SYSTEM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

A. DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION 1 SPECIFICATION SECTIONS, APPLY TO THIS SECTION.

B. DIVISION 22 COMMON WORK RESULTS FOR PLUMBING SECTIONS APPLY TO WORK OF THIS SECTION.

C. EXTENT OF GAS SYSTEMS WORK IS INDICATED ON DRAWINGS AND SCHEDULES, AND BY REQUIREMENTS OF THIS SECTION.

D. REFER TO OTHER DIVISION 22 SECTIONS FOR EXCAVATION AND BACKFILL REQUIRED IN CONJUNCTION WITH GAS PIPING.

1.2 CODES AND STANDARDS:

A. NFPA COMPLIANCE: FABRICATE AND INSTALL GAS SYSTEMS IN ACCORDANCE WITH NFPA 54 "NATIONAL FUEL GAS CODE".

B. UTILITY COMPLIANCE: FABRICATE AND INSTALL GAS SYSTEMS IN ACCORDANCE WITH LOCAL GAS UTILITY COMPANY REQUIREMENTS AND STANDARDS.

1.3 APPROVAL SUBMITTALS:

A. PRODUCT DATA: SUBMIT MANUFACTURER'S TECHNICAL PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR:
1. GAS REGULATORS
2. GAS APPLIANCE CONNECTORS.

1.4 O&M DATA SUBMITTALS: SUBMIT A COPY OF ALL APPROVAL SUBMITTALS. SUBMIT MAINTENANCE DATA AND PARTS LIST FOR GAS COCKS, BALL VALVES, CONTROL VALVES, LAB GAS COCKS, APPLIANCE CONNECTORS, GAS VENTS, REGULATORS. INCLUDE IN O&M MANUAL.

PART 2 - PRODUCTS

2.1 GENERAL: PROVIDE PIPING MATERIALS AND FACTORY-FABRICATED PIPING PRODUCTS OF SIZES, TYPES, PRESSURE RATINGS, AND CAPACITIES AS INDICATED. WHERE NOT INDICATED, PROVIDE PROPER SELECTION AS DETERMINED BY INSTALLER TO COMPLY WITH INSTALLATION REQUIREMENTS. PROVIDE MATERIALS AND PRODUCTS COMPLYING WITH NFPA 54 WHERE APPLICABLE. BASE PRESSURE RATING ON GAS PIPING SYSTEM MAXIMUM DESIGN PRESSURES. PROVIDE SIZES AND TYPES MATCHING PIPING AND EQUIPMENT CONNECTIONS; PROVIDE FITTINGS OF MATERIALS WHICH MATCH PIPE MATERIALS USED IN GAS SYSTEMS. WHERE MORE THAN ONE TYPE OF MATERIALS OR PRODUCTS IS INDICATED, SELECTION IS INSTALLER'S OPTION.

2.2 BASIC IDENTIFICATION: PROVIDE IDENTIFICATION COMPLYING WITH DIVISION 22 COMMON WORK RESULTS FOR PLUMBING SECTION "PLUMBING IDENTIFICATION."

2.3 BASIC PIPES AND PIPE FITTINGS: PROVIDE PIPES AND PIPE FITTINGS IN ACCORDANCE WITH THE FOLLOWING LISTING:

A. GAS SERVICE PIPING:
1. ALL PIPE SIZES: SCHEDULE 40 BLACK STEEL PIPE WITH WROUGHT-STEEL BUTTWELDING FITTINGS.
2. WRAPPING: MACHINE WRAP BLACK STEEL PIPE USING 50% OVERLAP WRAP, WITH POLYVINYL CHLORIDE TAPE. HAND WRAP FITTINGS USING 100% OVERLAP WRAP EXTENDING 6" BEYOND FITTING ONTO WRAPPED PIPE. COMPLY WITH TAPE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
3. PIPE SIZES 1/2" THROUGH 12": THERMOPLASTIC GAS PRESSURE PIPE, TUBING, AND FITTINGS COMPLYING WITH ASTM D 2513.
4. PIPE SIZES 2" THROUGH 12": REINFORCED EPOXY RESIN GAS PRESSURE PIPE AND FITTINGS COMPLYING WITH ASTM D 2517.

B. BUILDING DISTRIBUTION PIPING:
1. PIPE SIZE 2" AND SMALLER: SCHEDULE 40 BLACK STEEL PIPE WITH MALLEABLE-IRON THREADED FITTINGS.

2.4 SEALANTS: PROVIDE UL-LISTED OR AGA APPROVED SEALANTS FOR GAS PIPING. 1.1.

2.5 VALVES: PROVIDE VALVES COMPLYING WITH DIVISION 22 COMMON WORK RESULTS FOR PLUMBING SECTION "VALVES" AND THE FOLLOWING LISTING:

A. GAS COCKS 2" AND SMALLER: UL-LISTED, AGA APPROVED, 150 PSI NON-SHOCK WOG, FULL PORT, BRONZE STRAIGHTWAY COCK, FLAT OR SQUARE HEAD, THREADED ENDS.

B. ACCEPTABLE MANUFACTURERS FOR GAS COCKS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS OF RESUN R1430 AND R1431, MILLIKEN 200M AND 201M, OR APPROVED EQUAL.

2.6 GAS APPLIANCE TUBE CONNECTORS: PROVIDE COMMERCIAL GRADE APPLIANCE CONNECTORS WITH A 2 YEAR MANUFACTURER'S WARRANTY. TUBING SHALL BE TYPE 304 STAINLESS STEEL TUBING WITH TYPE 304 STAINLESS STEEL BRAIDING TO PROTECT TUBING FROM ELONGATION. TUBING SHALL BE COMPLETE WITH FACTORY INSTALLED END CONNECTORS. PROVIDE PRODUCTS THAT ARE AGA OR CGA APPROVED. INDICATE MAXIMUM BTU INPUT FOR EACH LENGTH AND SIZE USED ON SUBMITTAL.

2.7 GAS REGULATORS:

A. FIRST STAGE REGULATORS: PROVIDE UL LISTED FIRST STAGE (HIGH PRESSURE) REGULATORS SET FOR 15 PSI.

B. SECOND STAGE REGULATORS: PROVIDE UL LISTED SECOND STAGE (1-5 PSI) ADJUSTABLE REGULATORS WITH INTEGRAL RELIEF VALVES.

C. ACCEPTABLE MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE REGULATORS BY REGO, OR APPROVED EQUAL.

2.8 GAS METER AND REGULATOR: PROVIDED BY LOCAL UTILITY COMPANY. COORDINATE WITH MANUFACTURER'S REQUIREMENTS FOR REGULATORS AT INDIVIDUAL GAS TRAINS TO GAS-FIRED APPLIANCES AND EQUIPMENT.

PART 3 - EXECUTION

3.1 GENERAL: EXAMINE AREAS AND CONDITIONS UNDER WHICH GAS SYSTEMS MATERIALS AND PRODUCTS ARE TO BE INSTALLED. DO NOT PROCEED WITH WORK UNTIL UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED IN MANNER ACCEPTABLE TO INSTALLER. COORDINATE WITH GAS SUPPLIER PRIOR TO STARTING WORK.

3.2 INSTALLATION OF GAS PIPING:

A. GENERAL: INSTALL PIPES AND PIPE FITTINGS IN ACCORDANCE WITH RECOGNIZED INDUSTRY PRACTICES WHICH WILL ACHIEVE PERMANENTLY-LEAKPROOF PIPING SYSTEMS, CAPABLE OF PERFORMING EACH INDICATED SERVICE WITHOUT PIPING FAILURE. INSTALL EACH RUN WITH MINIMUM JOINTS AND COUPLINGS, BUT WITH ADEQUATE AND ACCESSIBLE UNIONS FOR DISASSEMBLY AND MAINTENANCE OR REPLACEMENT OF VALVES AND EQUIPMENT.

B. COMPLY WITH ANSI B31 CODE FOR PRESSURE PIPING.

C. LOCATE PIPING RUNS, EXCEPT AS OTHERWISE INDICATED, VERTICALLY AND HORIZONTALLY AND AVOID DIAGONAL RUNS WHEREVER POSSIBLE. ORIENT HORIZONTAL RUNS PARALLEL WITH WALLS AND COLUMN LINES. LOCATE RUNS AS SHOWN OR DESCRIBED BY DIAGRAMS, DETAILS AND NOTATIONS OR, IF NOT OTHERWISE INDICATED, RUN PIPING IN SHORTEST ROUTE WHICH DOES NOT OBSTRUCT USABLE SPACE OR BLOCK ACCESS FOR SERVICING BUILDING AND ITS EQUIPMENT.

D. ELECTRICAL EQUIPMENT SPACES: DO NOT RUN PIPING THROUGH TRANSFORMER VAULTS AND OTHER ELECTRICAL, COMMUNICATIONS, OR DATA EQUIPMENT SPACES AND ENCLOSURES UNLESS SHOWN.

E. CUT PIPE FROM MEASUREMENTS TAKEN AT THE SITE, NOT FROM DRAWINGS. KEEP PIPES FREE OF CONTACT WITH BUILDING CONSTRUCTION AND INSTALLED WORK.

F. ISOLATE ALL COPPER TUBING FROM STEEL AND CONCRETE BY WRAPPING THE PIPE AT THE CONTACT POINT, AND FOR ONE INCH ON EACH SIDE, WITH A CONTINUOUS PLASTIC SLEEVE. ISOLATE ALL COPPER TUBING INSTALLED IN BLOCK WALLS WITH A CONTINUOUS PLASTIC SLEEVE.

G. USE SEALANTS ON METAL GAS PIPING THREADS WHICH ARE CHEMICALLY RESISTANT TO GAS. USE SEALANTS SPARINGLY, AND APPLY TO ONLY MALE THREADS OF METAL JOINTS.

H. REMOVE CUTTING AND THREADING BURRS BEFORE ASSEMBLING PIPING.

I. DO NOT INSTALL DEFECTIVE PIPING OR FITTINGS. DO NOT USE PIPE WITH THREADS WHICH ARE CHIPPED, STRIPPED OR DAMAGED. DO NOT USE BUSHINGS IN THE GAS SYSTEM.

J. PLUG EACH GAS OUTLET, INCLUDING VALVES, WITH THREADED PLUG OR CAP IMMEDIATELY AFTER INSTALLATION AND RETAIN UNTIL CONTINUING PIPING, OR EQUIPMENT CONNECTIONS ARE COMPLETED.

K. GROUND GAS PIPING ELECTRICALLY AND CONTINUOUSLY WITHIN PROJECT, AND BOND TIGHTLY TO GROUNDING CONNECTION.

L. INSTALL DRIP-LEGS IN GAS PIPING WHERE INDICATED, AND WHERE REQUIRED BY CODE OR GAS COMPANY REQUIREMENTS. INSTALL DRIP LEGS AT EVERY TURN UP TO EQUIPMENT. INSTALL DRIP LEG ON THE MAIN GAS LINE TO THE BUILDING.

M. USE DIELECTRIC UNIONS WHERE DISSIMILAR METALS ARE JOINED TOGETHER.

N. INSTALL PIPING WITH 1/64" PER FOOT (1/8%) DOWNWARD SLOPE IN DIRECTION OF FLOW.

O. INSTALL PIPING PARALLEL TO OTHER PIPING, BUT MAINTAIN MINIMUM OF 12" CLEARANCE BETWEEN GAS PIPING AND STEAM OR HYDRONIC PIPING ABOVE 200°F.

3.3 GAS SERVICE: ARRANGE WITH UTILITY COMPANY TO PROVIDE GAS SERVICE TO INDICATED LOCATION WITH METER, PRESSURE REGULATOR AND SHUTOFF AT TERMINUS. CONSULT WITH UTILITY AS TO EXTENT OF ITS WORK, COSTS, FEES, AND PERMITS INVOLVED. THE CONTRACTOR SHALL PAY SUCH COSTS AND FEES AND OBTAIN PERMITS.

3.4 INSTALLATION OF PIPING SYSTEM JOINTS: PROVIDE JOINTS OF THE TYPE INDICATED IN EACH PIPING SYSTEM.

A. SOLDER COPPER TUBE-AND-FITTING JOINTS WHERE INDICATED, IN ACCORDANCE WITH RECOGNIZED INDUSTRY PRACTICE. CUT TUBE ENDS SQUARELY, REAM TO FULL INSIDE DIAMETER, AND CLEAN OUTSIDE OF TUBE ENDS AND INSIDE OF FITTINGS. APPLY NON-ACID TYPE SOLDER FLUX TO JOINT AREAS OF BOTH TUBES AND FITTINGS. INSERT TUBE FULL DEPTH INTO FITTING, AND SOLDER IN MANNER WHICH WILL DRAW SOLDER FULL DEPTH AND CIRCUMFERENCE OF JOINT. WIPE EXCESS SOLDER FROM JOINT BEFORE IT HARDENS.

B. THREAD PIPE IN ACCORDANCE WITH ANSI B2.1; CUT THREADS FULL AND CLEAN USING SHARP DIES. REAM THREADED ENDS TO REMOVE BURRS AND RESTORE FULL INSIDE DIAMETER. APPLY PIPE JOINT COMPOUND, OR PIPE JOINT TAPE (TEFLON) WHERE RECOMMENDED BY PIPE/FITTING MANUFACTURER, ON MALE THREADS AT EACH JOINT AND TIGHTEN JOINT TO LEAVE NOT MORE THAN 3 THREADS EXPOSED. PAINT EXPOSED THREADS TO RETARD RUSTING.

C. WELD PIPE JOINTS IN ACCORDANCE WITH RECOGNIZED INDUSTRY PRACTICE AND AS FOLLOWS. BE GUIDED BY ANSI B.31.

1. WELD PIPE JOINTS ONLY WHEN AMBIENT TEMPERATURE IS ABOVE 0°F.
2. BEVEL PIPE ENDS AT A 37.5° ANGLE WHERE POSSIBLE, SMOOTH ROUGH CUTS, AND CLEAN TO REMOVE SLAG, METAL PARTICLES AND DIRT.
3. USE PIPE CLAMPS OR TACK-WELD JOINTS; 4 WELDS FOR PIPE SIZES TO 10". ALL WELDS SHALL BE OPEN-BUTT.
4. BUILD UP WELDS WITH ROOT PASS, FOLLOWED BY FILLER PASS AND THEN A COVER PASS. ELIMINATE VALLEYS AT CENTER AND EDGES OF EACH WELD. WELD BY PROCEDURES WHICH WILL ENSURE ELIMINATION OF UNSOUND OR UNFUSED METAL, CRACKS, OXIDATION, BLOW-HOLES AND NON-METALLIC INCLUSIONS.
5. DO NOT WELD-OUT PIPING SYSTEM IMPERFECTIONS BY TACK-WELDING PROCEDURES; REFABRICATE TO COMPLY WITH REQUIREMENTS.
6. AT INSTALLER'S OPTION, INSTALL FORGED BRANCH-CONNECTION FITTINGS WHEREVER BRANCH PIPE IS LESS THAN 3" AND AT LEAST TWO PIPE SIZES SMALLER THAN MAIN PIPE INDICATED; OR INSTALL REGULAR "T" FITTING. WELD-O-LET OR EQUAL.
7. ALL FIELD WELDING AND CUTTING USING OXYGEN-ACETYLENE METHODS WITHIN THE BUILDING SHALL BE PERFORMED IN ACCORDANCE WITH NFPA-51B (2014).

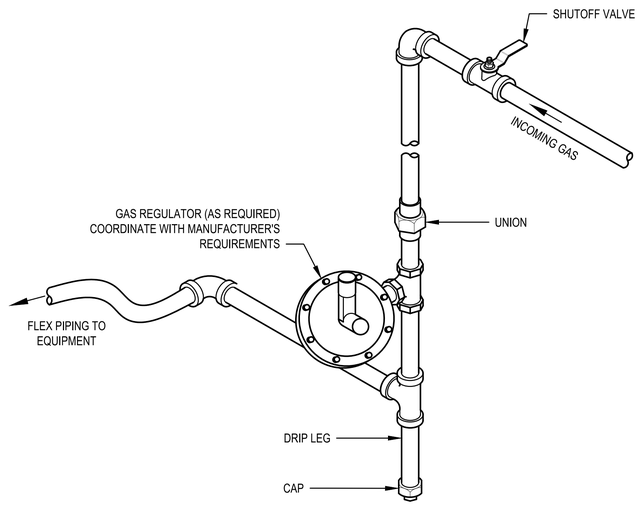
3.5 INSTALLATION OF VALVES:

3.6 EQUIPMENT CONNECTIONS: CONNECT GAS PIPING TO EACH GAS-FIRED EQUIPMENT ITEM, WITH UNION, DRIP LEG, AND SHUTOFF GAS COCK. COMPLY WITH EQUIPMENT MANUFACTURER'S INSTRUCTIONS.

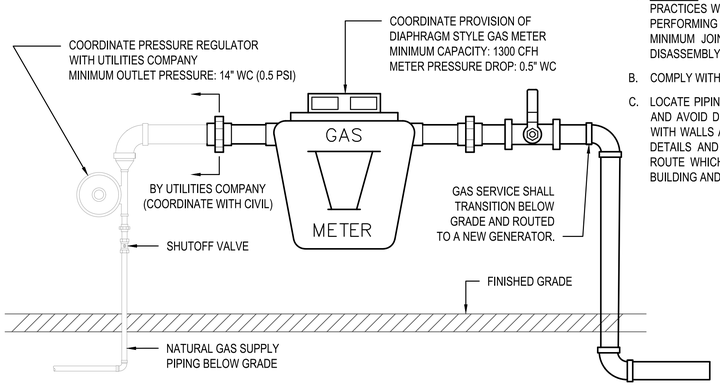
3.7 PIPING TESTS: INSPECT, TEST, AND PURGE GAS SYSTEMS IN ACCORDANCE WITH NFPA 54, LOCAL UTILITY REQUIREMENTS.

GAS EQUIPMENT SCHEDULE

MARK	FIXTURE TYPE	NATURAL GAS		
		SIZE	CAPACITY	PRESSURE
GEN-1	GAS GENERATOR (BY ELECTRICAL)	2"	1202	14 IN. WC
SYSTEM TOTAL			1202 MBH	



1 GAS PRESSURE REGULATOR DETAIL
NOT TO SCALE



2 GAS METER DETAIL
NOT TO SCALE

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SHEET: P0.1

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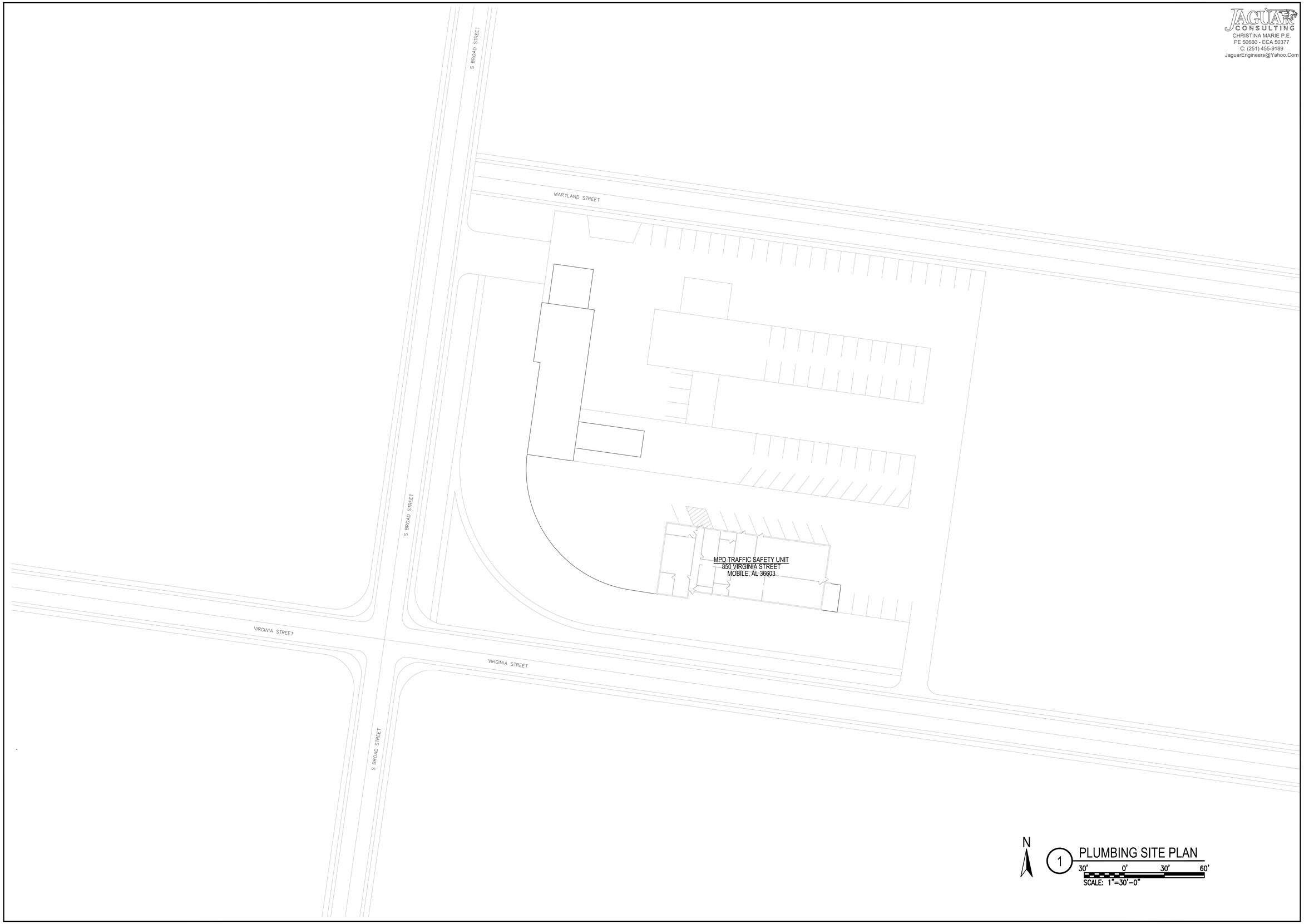

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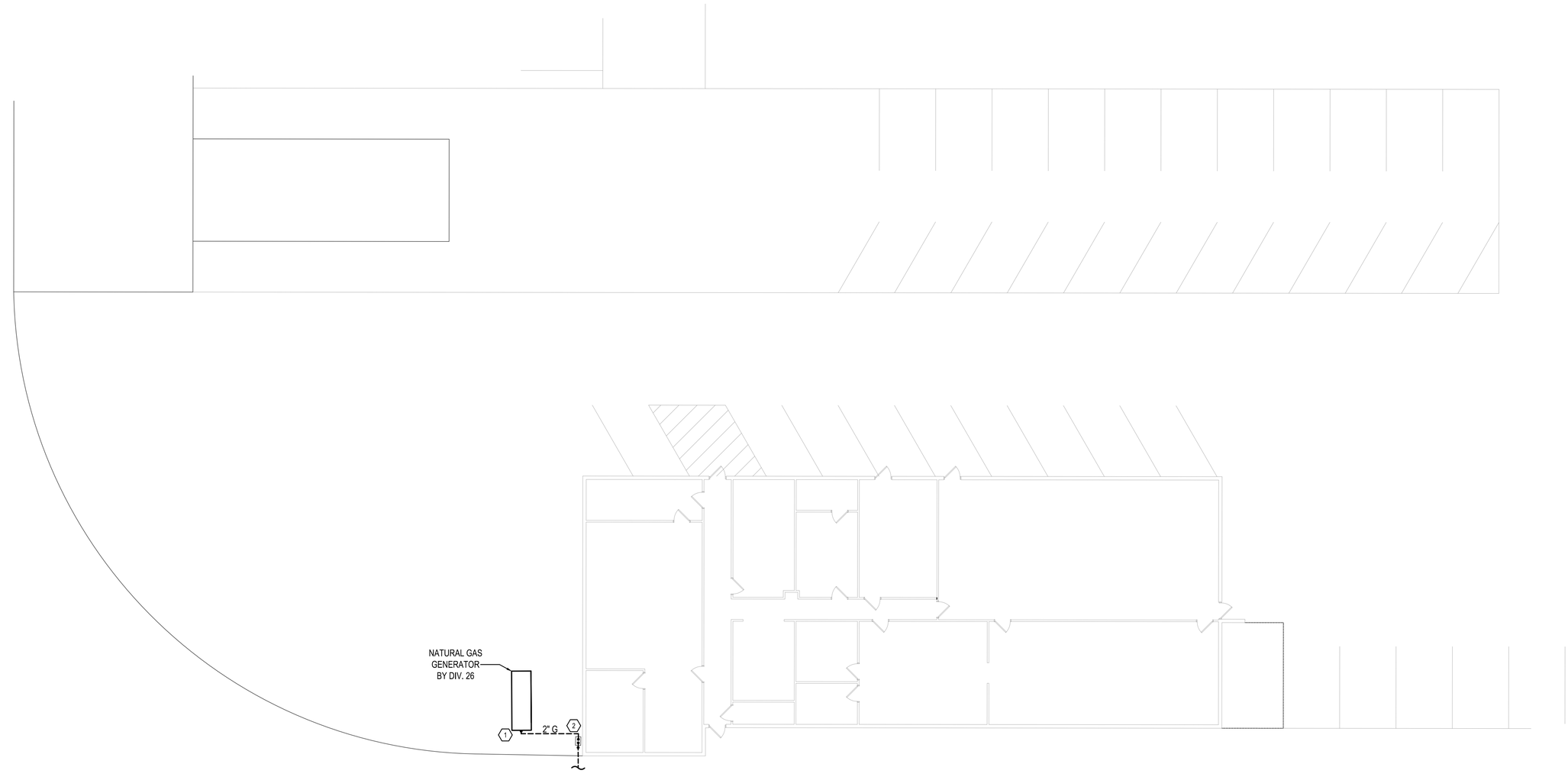
SHEET TITLE: PLUMBING SITE PLAN

SHEET: P1.0

SHEET NOTES

1. GAS PIPING UP TO GENERATOR. PROVIDE SHUTOFF VALVE, REGULATOR, AND ALL FITTINGS REQUIRED FOR A COMPLETE INSTALLATION IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
2. COORDINATE PROVISION OF GAS METER, SHUTOFF VALVE, AND PRESSURE REGULATOR WITH LOCAL UTILITY COMPANY. METER SHALL BE SUITABLE FOR 1300 MBH DEMAND WITH 0.5" WC PRESSURE DROP (MAXIMUM). SET PRESSURE REGULATOR FOR 14" WC (0.5 PSI) DISTRIBUTION PRESSURE.



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ALABAMA LICENSED No. 39069 PROFESSIONAL ENGINEER MICHAEL A. PRUETT 01-10-2025

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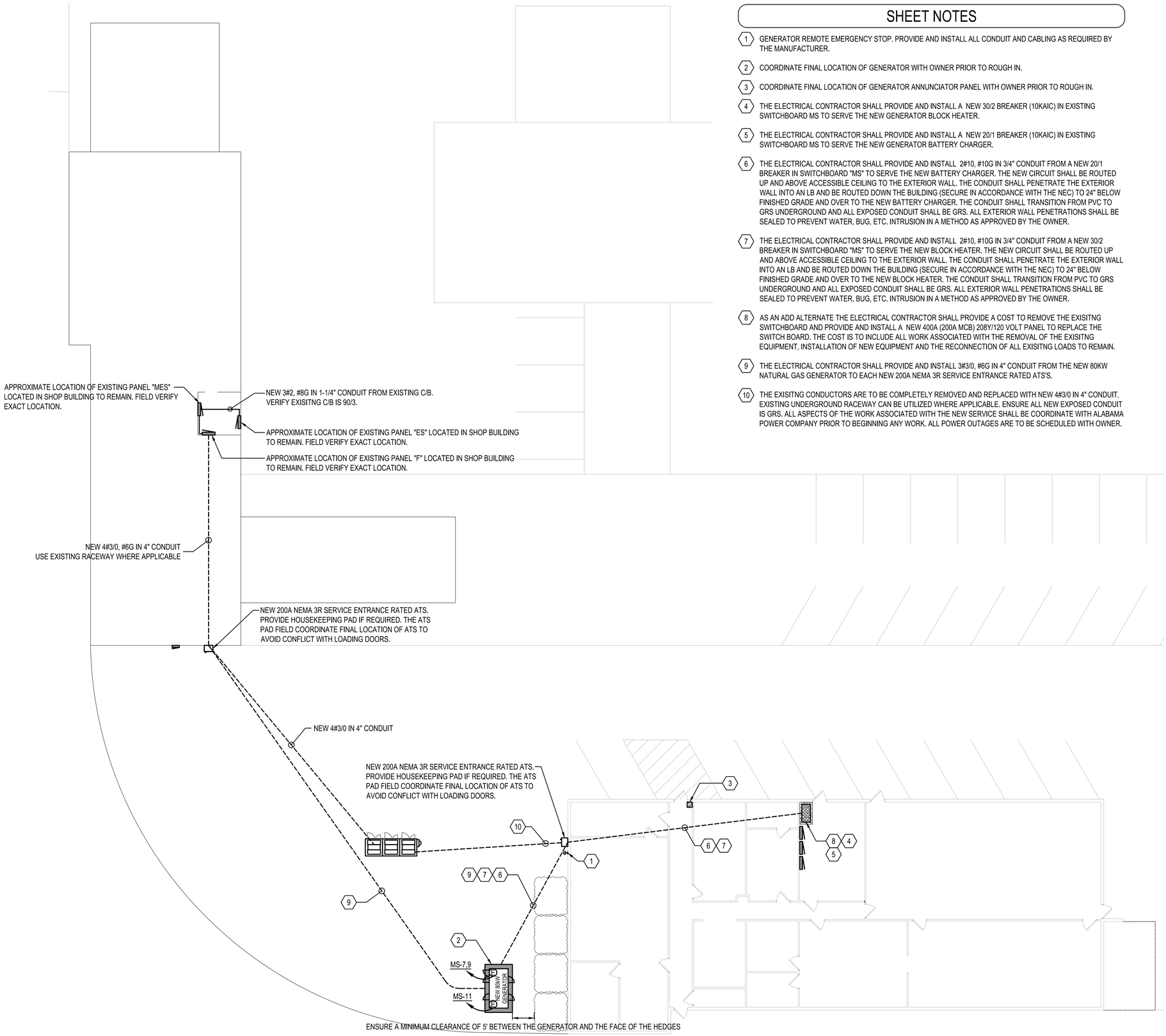
SHEET TITLE: PLUMBING NEW WORK

SHEET: P2.0



SHEET NOTES

1. GENERATOR REMOTE EMERGENCY STOP. PROVIDE AND INSTALL ALL CONDUIT AND CABLING AS REQUIRED BY THE MANUFACTURER.
2. COORDINATE FINAL LOCATION OF GENERATOR WITH OWNER PRIOR TO ROUGH IN.
3. COORDINATE FINAL LOCATION OF GENERATOR ANNUNCIATOR PANEL WITH OWNER PRIOR TO ROUGH IN.
4. THE ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL A NEW 30/2 BREAKER (10KAIC) IN EXISTING SWITCHBOARD MS TO SERVE THE NEW GENERATOR BLOCK HEATER.
5. THE ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL A NEW 20/1 BREAKER (10KAIC) IN EXISTING SWITCHBOARD MS TO SERVE THE NEW GENERATOR BATTERY CHARGER.
6. THE ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL 2#10, #10G IN 3/4" CONDUIT FROM A NEW 20/1 BREAKER IN SWITCHBOARD "MS" TO SERVE THE NEW BATTERY CHARGER. THE NEW CIRCUIT SHALL BE ROUTED UP AND ABOVE ACCESSIBLE CEILING TO THE EXTERIOR WALL. THE CONDUIT SHALL PENETRATE THE EXTERIOR WALL INTO AN LB AND BE ROUTED DOWN THE BUILDING (SECURE IN ACCORDANCE WITH THE NEC) TO 24" BELOW FINISHED GRADE AND OVER TO THE NEW BATTERY CHARGER. THE CONDUIT SHALL TRANSITION FROM PVC TO GRS UNDERGROUND AND ALL EXPOSED CONDUIT SHALL BE GRS. ALL EXTERIOR WALL PENETRATIONS SHALL BE SEALED TO PREVENT WATER, BUG, ETC. INTRUSION IN A METHOD AS APPROVED BY THE OWNER.
7. THE ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL 2#10, #10G IN 3/4" CONDUIT FROM A NEW 30/2 BREAKER IN SWITCHBOARD "MS" TO SERVE THE NEW BLOCK HEATER. THE NEW CIRCUIT SHALL BE ROUTED UP AND ABOVE ACCESSIBLE CEILING TO THE EXTERIOR WALL. THE CONDUIT SHALL PENETRATE THE EXTERIOR WALL INTO AN LB AND BE ROUTED DOWN THE BUILDING (SECURE IN ACCORDANCE WITH THE NEC) TO 24" BELOW FINISHED GRADE AND OVER TO THE NEW BLOCK HEATER. THE CONDUIT SHALL TRANSITION FROM PVC TO GRS UNDERGROUND AND ALL EXPOSED CONDUIT SHALL BE GRS. ALL EXTERIOR WALL PENETRATIONS SHALL BE SEALED TO PREVENT WATER, BUG, ETC. INTRUSION IN A METHOD AS APPROVED BY THE OWNER.
8. AS AN ADD ALTERNATE THE ELECTRICAL CONTRACTOR SHALL PROVIDE A COST TO REMOVE THE EXISITNG SWITCHBOARD AND PROVIDE AND INSTALL A NEW 400A (200A MCB) 208Y/120 VOLT PANEL TO REPLACE THE SWITCH BOARD. THE COST IS TO INCLUDE ALL WORK ASSOCIATED WITH THE REMOVAL OF THE EXISITNG EQUIPMENT, INSTALLATION OF NEW EQUIPMENT AND THE RECONNECTION OF ALL EXISITNG LOADS TO REMAIN.
9. THE ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL 3#3/0, #6G IN 4" CONDUIT FROM THE NEW 80KW NATURAL GAS GENERATOR TO EACH NEW 200A NEMA 3R SERVICE ENTRANCE RATED ATS'S.
10. THE EXISITNG CONDUCTORS ARE TO BE COMPLETELY REMOVED AND REPLACED WITH NEW 4#3/0 IN 4" CONDUIT. EXISTING UNDERGROUND RACEWAY CAN BE UTILIZED WHERE APPLICABLE. ENSURE ALL NEW EXPOSED CONDUIT IS GRS. ALL ASPECTS OF THE WORK ASSOCIATED WITH THE NEW SERVICE SHALL BE COORDINATE WITH ALABAMA POWER COMPANY PRIOR TO BEGINNING ANY WORK. ALL POWER OUTAGES ARE TO BE SCHEDULED WITH OWNER.

1 NEW WORK ELECTRICAL PLAN

10' 0' 10' 20'

SCALE: 3/32"=1'-0"

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DELL CONSULTING PROJECT: 24-136

ALABAMA LICENSED PROFESSIONAL ENGINEER No. 30660 CHRISTINA MARIE

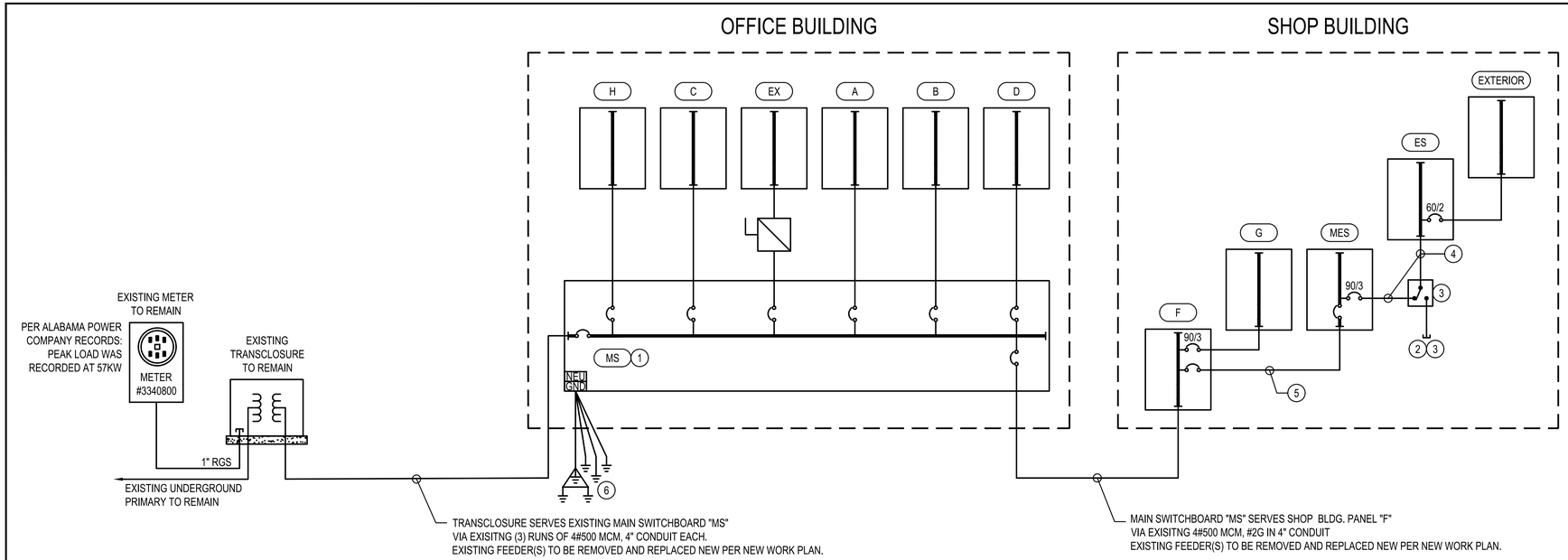
NUMBER REVISION	REVISION DESCRIPTION

PD-003-25 MDP TRAFFIC SAFETY UNIT
EMERGENCY GENERATOR
850 VIRGINIA STREET MOBILE, ALABAMA 36603

DESIGNED BY: CM
DRAWN BY: CM
CHECKED BY: AWM
DATE: 01-10-2024

SHEET TITLE: NEW WORK ELECTRICAL PLAN

SHEET: E4.0

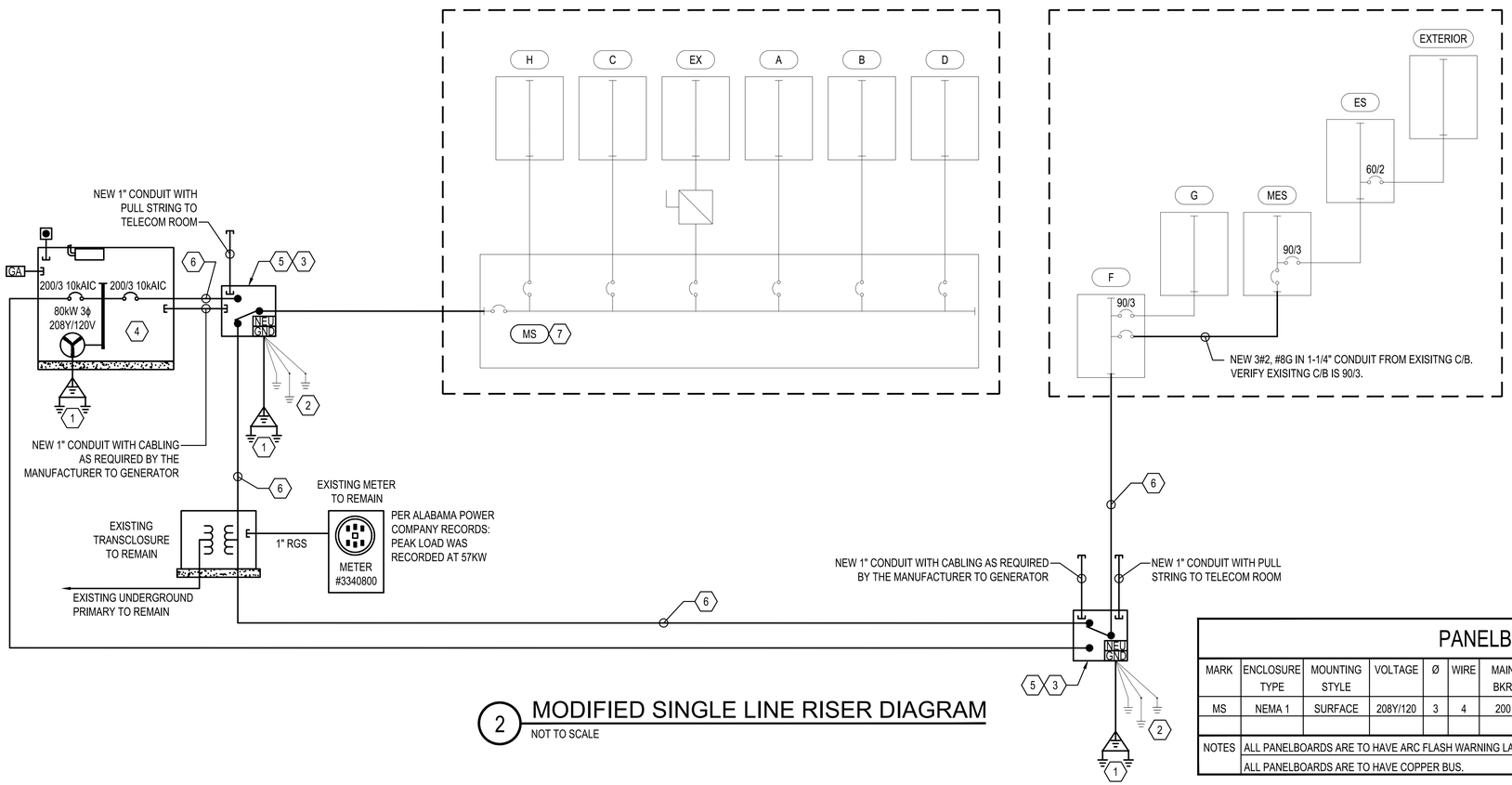


1 EXISTING SINGLE LINE RISER DIAGRAM

NOT TO SCALE

EXISTING SINGLE LINE DIAGRAM NOTES

1. EXISTING 1200A SERVICE ENTRANCE RATED SWITCHBOARD "MS" TO REMAIN (UNLESS ALTERNATE IS ACCEPTED). SERVICE ENTRANCE EQUIPMENT TO BE MODIFIED PER NEW WORK PLANS. REMOVE BONDING JUMPER FROM EXISITNG SERVICE ENTRANCE RATED SWITCHBOARD.
2. TO EXISITNG EXTERIOR (INOPERABLE) DIESEL GENERATOR.
3. EXISITNG GENERATOR TO BE COMPLETELY REMOVED. ASSOCIATED TRANSFER SWITCH, ANCILLARY CIRCUITS, ETC. TO BE COMPLETELY REMOVED. REMOVE EXISITNG CONDUIT AND CONDUCTORS BACK TO SOURCE OR NEAREST JUNCTION POINT REMAIN.
4. EXISITNG FEEDER TO BE REMOVED AND REPLACED NEW PER NEW WORK PLANS.
5. THE ELECTRICAL CONTRACTOR SHALL INVESTIGATE AND VERIFY EXISITNG FEEDER PRIOR TO BEGINNING ANY WORK.
6. EXISTING BONDING CONNECTION TO BE REMOVED. PROVIDE NEW AND CONNECT PER NEW WORK PLANS.



2 MODIFIED SINGLE LINE RISER DIAGRAM

NOT TO SCALE

MODIFIED SINGLE LINE DIAGRAM NOTES

1. NEW #3/0 GEC TO THREE 20' GROUND RODS ON 20' CENTERS IN EQUILATERAL DELTA ARRANGEMENT.
2. NEW #3/0 BONDS TO FOUNDATION REBAR, BUILDING WATER SERVICE AND BUILDING STEEL.
3. THE ELECTRICAL CONTRACTOR SHALL LABEL THE NEW ATS IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE ARTICLE 110.24; BASED ON 500 KVA PAD MOUNTED TRANSFORMER AT A DISTANCE OF 60', THE AVAILABLE FAULT CURRENT 22,067 AMPS. FINAL PARAMETERS (DISTANCE, TRANSFORMER SIZE, ETC.) SHALL BE COORDINATED WITH ALABAMA POWER COMPANY PRIOR TO LABELING, ADJUST AS REQUIRED.
4. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR ALL ASPECTS OF THE GENERATOR INSTALLATION, INCLUDING BUT NOT LIMITED TO LOAD TESTING, COORDINATION WITH SPIRE FOR GAS CONNECTION, COSTS ASSOCIATED WITH HOOK UP AND INSTALLATION, ETC..
5. NEW 200A NEMA 3R SERVICE ENTRANCE RATED ATS.
6. THE EXISITNG CONDUCTORS ARE TO BE COMPLETELY REMOVED AND REPLACED WITH NEW 4#3/0 IN 4" CONDUIT. EXISITNG UNDERGROUND RACEWAY CAN BE UTILIZED WHERE APPLICABLE. ENSURE ALL NEW EXPOSED CONDUIT IS GRS. ALL ASPECTS OF THE WORK ASSOCIATED WITH THE NEW SERVICE SHALL BE COORDINATE WITH ALABAMA POWER COMPANY PRIOR TO BEGINNING ANY WORK.
7. AS AN ADD ALTERNATE THE ELECTRICAL CONTRACTOR SHALL PROVIDE A COST TO REMOVE THE EXISITNG SWITCHBOARD AND PROVIDE AND INSTALL A NEW 400A (200A MCB) 208Y/120 VOLT PANEL TO REPLACE THE SWITCH BOARD. THE COST IS TO INCLUDE ALL WORK ASSOCIATED WITH THE REMOVAL OF THE EXISITNG EQUIPMENT, INSTALLATION OF NEW EQUIPMENT AND THE RECONNECTION OF ALL EXISITNG LOADS TO REMAIN.

PANELBOARD INFORMATION SCHEDULE 8

MARK	ENCLOSURE TYPE	MOUNTING STYLE	VOLTAGE	Ø	WIRE	MAIN BKR	IF MLO, SERVING BKR	SERVICE RATED	kAIC RATING	Ø BUS RATING (A)	N BUS RATING	FEEDER			NOTES
												CONDUCTORS	GROUND	CONDUIT	
MS	NEMA 1	SURFACE	208Y/120	3	4	200	N/A	NO	22	400	100%	4#3/0	#6	2 1/2"C	
NOTES	ALL PANELBOARDS ARE TO HAVE ARC FLASH WARNING LABEL IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE ARTICLE 110.16.														
	ALL PANELBOARDS ARE TO HAVE COPPER BUS.														

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DELL CONSULTING PROJECT: 24-136

ALABAMA LICENSED PROFESSIONAL ENGINEER No. 50660 CHRISTINA MARIE

REVISION DESCRIPTION

NUMBER REVISION

PD-003-25 MDP TRAFFIC SAFETY UNIT EMERGENCY GENERATOR

850 VIRGINIA STREET MOBILE, ALABAMA 36603

DESIGNED BY: CM

DRAWN BY: CM

CHECKED BY: AWM

DATE: 01-10-2024

SHEET TITLE: ELECTRICAL RISER DIAGRAM AND SCHEDULES

SHEET: E5.0

PANELBOARD SCHEDULE

MARK: EXISTING MS

CKT #	LOAD DESCRIPTION	BREAKER P	BREAKER TRIP	PHASE (kVA) A	PHASE (kVA) B	PHASE (kVA) C	PHASE (kVA) A	PHASE (kVA) B	PHASE (kVA) C	BREAKER TRIP	BREAKER P	LOAD DESCRIPTION	CKT #
1													2
3	EXISTING PANEL "F" *	3	400							250	3	OCCUPIED BREAKER *	4
5	IN SHOP BUILDING												6
7													8
9	SPARE	3	200							200	3	SPARE	10
11													12
13													14
15	PANEL A *	3	100							70	3	SPARE	16
17													18
19													20
21	SPARE	3	100							100	3	CHILLER #1 *	22
23													24
25													26
27	PANEL B *	3	70							70	3	PANEL C *	28
29													30
31													32
33	SPARE	3	30							20	3	OCCUPIED BREAKER * **	34
35													36
37													38
39	AIR HANDLER *	3	30							100	3	CHILLER #2 *	40
41													42

TOTAL (kVA) ØA 19.0 ØB 19.0 ØC 19.0 HIGH PHASE (AMPS) 158.3

TOTAL CONNECTED LOAD (kVA) 57.0 TOTAL LOAD (AMPS) 158.2

CREATE A DIRECTORY TO INDICATE INSTALLED LOADS. INDICATE LOAD TYPE (REC, LTG, AHU-1, ETC.) AND ROOM NUMBERS SERVED FOR EVERY BRANCH CIRCUIT.

* THIS 3 POLE BREAKER APPEARS TO BE SERVING A SINGLE PHASE LOAD - VERIFY LOAD BEING SERVED.

** VERIFY ALL EXISTING BREAKERS AND ASSOCIATED FEEDER SIZES PRIOR TO ANY MODIFICATIONS TO THIS PANEL.

PANELBOARD SCHEDULE

MARK: MODIFIED MS

CKT #	LOAD DESCRIPTION	BREAKER P	BREAKER TRIP	PHASE (kVA) A	PHASE (kVA) B	PHASE (kVA) C	PHASE (kVA) A	PHASE (kVA) B	PHASE (kVA) C	BREAKER TRIP	BREAKER P	LOAD DESCRIPTION	CKT #
1													2
3	SPARE	3	400							250	3	OCCUPIED BREAKER *	4
5													6
7	NEW BLOCK HEATER	2	30	1.0									8
9					1.0					200	3	SPARE	10
11	NEW BATTERY CHARGER	1	20			1.0							12
13													14
15	PANEL A *	3	100							70	3	SPARE	16
17													18
19													20
21	SPARE	3	100							100	3	CHILLER #1 *	22
23													24
25													26
27	PANEL B *	3	70							70	3	PANEL C *	28
29													30
31													32
33	SPARE	3	30							20	3	OCCUPIED BREAKER * **	34
35													36
37													38
39	AIR HANDLER *	3	30							100	3	CHILLER #2 *	40
41													42

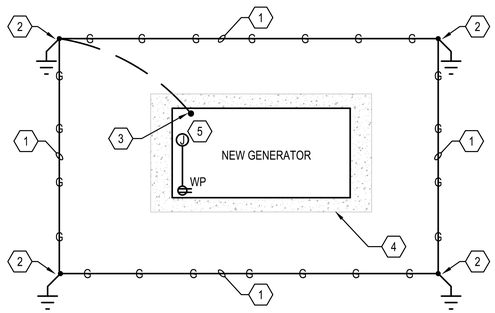
1.0 1.0 1.0

TOTAL (kVA) ØA 20.0 ØB 20.0 ØC 20.0 HIGH PHASE (AMPS) 166.7

TOTAL CONNECTED LOAD (kVA) 60.0 TOTAL LOAD (AMPS) 166.5

CREATE A DIRECTORY TO INDICATE INSTALLED LOADS. INDICATE LOAD TYPE (REC, LTG, AHU-1, ETC.) AND ROOM NUMBERS SERVED FOR EVERY BRANCH CIRCUIT.

* IF ALTERNATE IS ACCEPTED, THIS EXISTING LOAD IS TO BE REFED FROM NEW PANEL. ALL OUTAGES ARE TO BE SCHEDULED WITH THE OWNER.



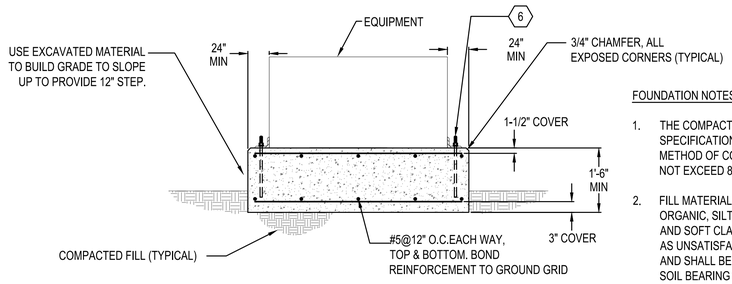
PLAN VIEW

EPOXY BOLT EMBEDMENT

BOLT Ø	MINIMUM EMBEDMENT
1/2"	6"
5/8"	7 1/2"
3/4"	9"

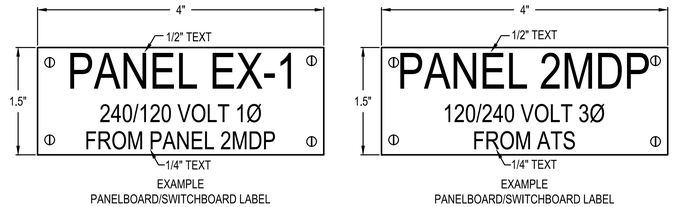
SHEET NOTES

1. THE ELECTRICAL CONTRACTOR SHALL BOND NEW COPPER CLAD GROUND RODS AND REINFORCEMENT WITH #3/0 TINNED STRANDED BARE COPPER CONDUCTOR.
2. PROVIDE 3/4" x 20' COPPER CLAD GROUND ROD.
3. THE ELECTRICAL CONTRACTOR IS TO CONNECT GROUNDING ROD ELECTRODE CONDUCTOR TO GENERATOR GROUND LUG. BOND NEUTRAL TO GROUND.
4. THE GENERATOR PAD IS TO BE A MINIMUM OF 24" LARGER THAN THE GENERATOR IN EACH DIRECTION.
5. THE ELECTRICAL CONTRACTOR SHALL INSTALL A JUNCTION BOX AT THE GENERATOR TO PROVIDE A TERMINATION POINT FOR THE BLOCK HEATER AND BATTERY CHARGER.
6. STAINLESS STEEL ANCHOR BOLTS AS REQUIRED BY EQUIPMENT MANUFACTURER, DRILL AND SET W/ HILTI HIT HY-150 EPOXY OR ENGINEER APPROVED EQUIVALENT, PROJECTION AS REQUIRED FOR EQUIPMENT, SEE TABLE FOR EMBEDMENT, PROVIDE MINIMUM SPACING AND EDGE DISTANCE AS RECOMMENDED BY HILTI. (TYPICAL)



FOUNDATION NOTES:

1. THE COMPACT FILL SHALL MEET THE ASTM SPECIFICATIONS AS TO GRADATION AND METHOD OF COMPACTION. LIFTS SHALL NOT EXCEED 8" AFTER COMPACTION.
2. FILL MATERIAL, MUD, MUCK, PEAT, ORGANIC, SILT, LOOSE INORGANIC SILT AND SOFT CLAY SHALL BE CONSIDERED AS UNSATISFACTORY BEARING MATERIALS AND SHALL BE TREATED AS HAVING NO SOIL BEARING VALUE.
3. BACKFILL IN LAYERS NOT MORE THAN 8" LIFTS. COMPACT SOIL MATERIALS TO NOT LESS THAN 95% MODIFIED PROCTOR TEST.



ENGRAVED PLASTIC TAG WITH BLACK LETTERS ON WHITE BACKGROUND (RED BACKGROUND FOR EMERGENCY EQUIPMENT). TAG SHALL HAVE ALL EDGES BEVELED AND SMOOTH. SECURE TAG WITH 4 CHROME (STAINLESS STEEL FOR WET OR DAMP LOCATIONS) SCREWS. ADHESIVE BACKING, TAPE, ETC IS NOT ALLOWED. DIMENSIONS ARE MINIMUM, TAG SHALL BE LARGER AS REQUIRED TO FIT APPROPRIATE TEXT.

EMERGENCY STOP FOR GENERATOR

ENGRAVED PLASTIC TAG WITH 1" HIGH WHITE LETTERS ON RED BACKGROUND. TAG SHALL HAVE ALL EDGES BEVELED AND SMOOTH. SECURE TAG WITH 2 CHROME (STAINLESS STEEL FOR WET OR DAMP LOCATIONS) SCREWS, ADHESIVE BACKING, TAPE, ETC IS NOT ALLOWED. TAG SHALL BE SIZED AS REQUIRED TO FIT APPROPRIATE TEXT.

1 GENERATOR GROUNDING/PAD DETAIL
NOT TO SCALE

2 GENERATOR PAD DETAIL
NOT TO SCALE

3 GENERATOR E-STOP LABEL DETAIL
NOT TO SCALE

4 TYPICAL EQUIPMENT LABELING DETAIL
NOT TO SCALE

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DRAWN BY: CM
CHECKED BY: AWM
DATE: 01-10-2024

SHEET TITLE: ELECTRICAL DETAILS AN SCHEDULES

SHEET: E6.0