

PROJECT SPECIFICATIONS
FOR:
Emergency Management Building
Project No. PW16B021BLD



County of Jefferson, Missouri
P.O. BOX 100
HILLSBORO, MO 63050
June 7, 2016

REQUEST FOR BID

BID OF

Bidder Name: _____

Bidder Address: _____

APPROVED FOR CONSTRUCTION

BY:

A blue ink signature of Jason Jonas.

DATE: 5/2/2016

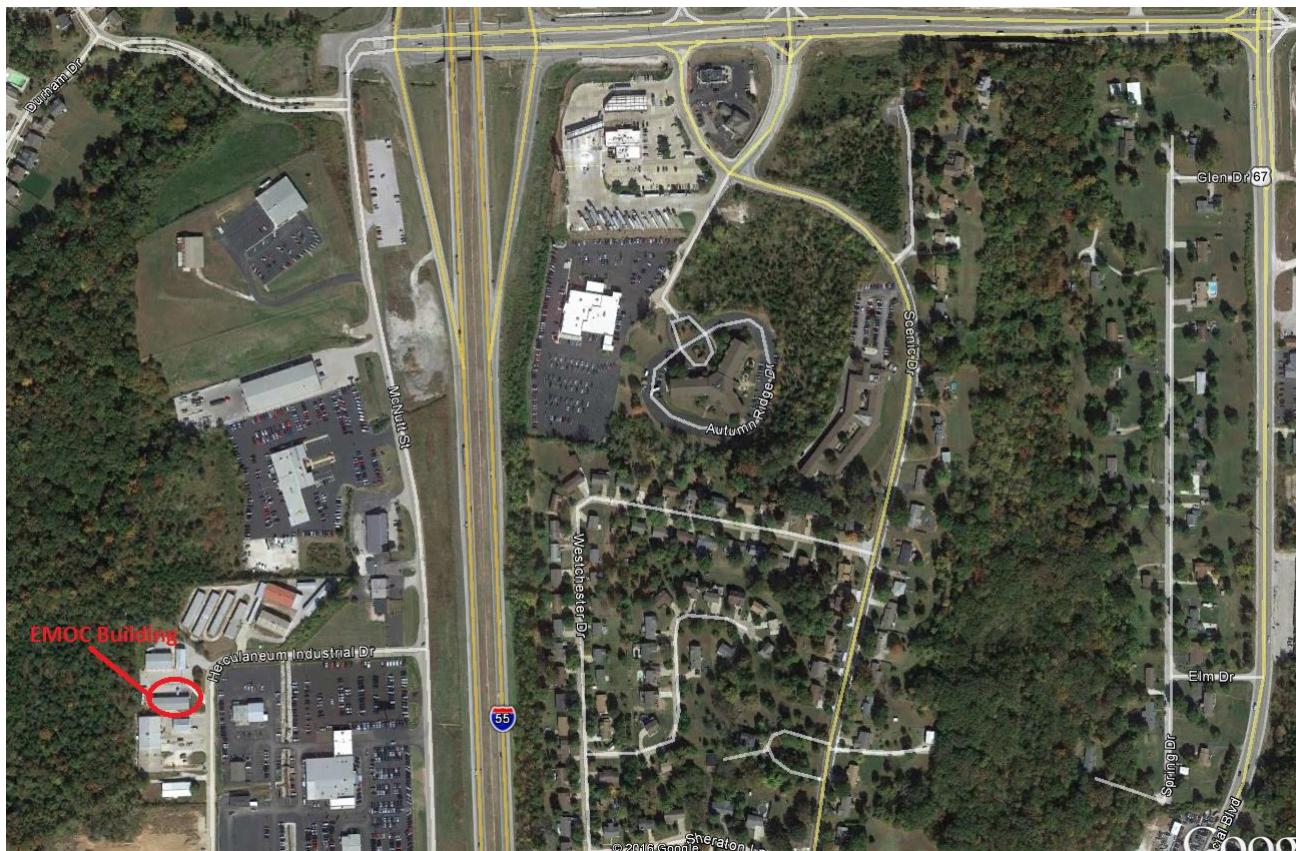


TABLE OF CONTENTS

TITLE

Table of Contents.....	2
Project Location Map.....	3
Bid Notice.....	4
Instructions to Bidder	5
Notice to Contractors:.....	10
Proposed Work	10
Compliance With Contract Provisions	10
Period of Performance	10
Liquidated Damages	10
Bid Guaranty	10
Certifications	10
Taxes	10
Missouri Domestic Product Procurement Act	11
Antidiscrimination	11
Prevailing Wage	11
Worker Eligibility Requirements	11
OSHA Training Requirements	11
Addendum Acknowledgement	11
Signature and Identity of Bidder.....	12
Subcontractor Disclosure	13
Project Award	13
Prime Contractor Requirements	13
Tax Exempt Status	13
Bid Form.....	14
Bid Bond.....	17
Bidder's Acknowledgement.....	18
Annual Worker Eligibility Verification Affidavit.....	19
Agreement Form.....	20
Contract Performance Bond/Payment & Material Bond Forms.....	26
General Conditions.....	28
General Special Provisions:.....	44
Affidavit of Compliance with the Prevailing Wage Law.....	45
Cooperation with Utilities.....	46
Subletting, Warranties, Guarantees, Inspection and Traffic Control.....	47
Applicable State Wage Rates	53
Job Special Provisions with Table.....	74

Emergency Management Operation Center (EMOC) location: 1403 Herculaneum Industrial Drive, Herculaneum , Missouri



BID NOTICE

Sealed bids for the Emergency Management Operation Center (EMOC), Project No. PW16B021BLD, will be received at the office of The Department of the County Clerk, Jefferson County Administration Center, 729 Maple Street, Hillsboro, Missouri until 2:00 o'clock P.M. (CDST) on the **7th of June, 2016**, and at that time will be publicly opened and read. All bids shall be submitted in triplicate in an opaque sealed envelope, marked with the Project title, name and address of the Bidder, and accompanied by the other required documents. Bids submitted via fax or electronic will be rejected. Late Bids will not be accepted and will be returned to the sender, unopened.

The proposed work includes the remodeling of a single story slab on grade, pre-engineered steel building; with all steel siding and roof; with associated electrical/telecommunications, HVAC, and plumbing improvements. The contractor will be responsible for providing the materials and labor necessary to complete the project in a timely manner in accordance with these Specifications and Job Special Provisions. The contractor shall be responsible for arranging delivery of materials to job sites. The bid shall also include disposal of all waste and demolition materials. **PREBID MEETING will be held at 1403 Herculaneum, Industrial Drive, Herculaneum, Missouri on May 18th, from 1:00pm -2:30 pm.**

Work shall be in accordance with these Specifications, and Job Special Provisions. Where not specifically covered by these Specifications or Job Special Provisions, the Contractor shall adhere to the Latest Edition of the, Jefferson County Building Code.

Specifications for this work will be available, at no cost, as a downloadable file from the Jefferson County website (<http://www.jeffcomo.org/PublicWorksProjects.aspx?nodeID=Purchasing>), beginning **May 9th, 2016**. The bidder will be responsible to check the County's website for addendum(s) regarding this project prior to bid opening. All potential bidders **must complete the “Plan Holder Contact Information” form** and submit this form to Public Works at pwprojects@jeffcomo.org and request placement on the bidder's list in order to be considered for award.

All labor used in the construction of this public improvement shall be paid a wage no less than the prevailing hourly rate of wages of work of a similar character in this locality as established by the State of Missouri's "Annual Wage Order" that is currently effective 10 calendar days prior to bid opening.

The County of Jefferson, Missouri hereby notifies all bidders that it will affirmatively ensure that in any contract entered into pursuant to this advertisement, businesses owned and controlled by socially and economically disadvantaged individuals will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, religion, creed, sex, age, ancestry, or national origin in consideration for an award.

All bids shall be made on the forms provided. The County of Jefferson hereby reserves the right to reject any or all bids, to waive any informality in the bids received and to accept the bid that in its judgment will be for the best interest of Jefferson County, Missouri.

Contractors and sub-contractors who sign a contract to work on public works projects must provide a 10-Hour OSHA construction safety program, or similar program approved by the Department of Labor and Industrial Relations, to be completed by their on-site employees within sixty (60) days of beginning work on the construction project.

Each bid must be accompanied by a certified check or satisfactory bid bond payable to Jefferson County, Missouri, in the amount of five percent (5%) of the total amount of bid as a guarantee that the successful bidder will enter into a contract and furnish the required bonds within fifteen (15) days after the award is made.

END BID NOTICE

INSTRUCTIONS TO BIDDERS

1. DEFINED TERMS

1.1 Terms used in these Instructions to Bidders, which are defined in the General Conditions of this Construction Contract, that have the meanings assigned to them in the General Conditions. The term "Successful Bidder" means the lowest, qualified, responsible Bidder to whom the County (on the basis of the County evaluation as hereinafter provided) makes an award.

2. COPIES OF BIDDING DOCUMENTS

2.1 All documents for bidding will be available online for interested bidders to access and print. The bidder is responsible for any bid document printing costs.

3. QUALIFICATIONS OF BIDDERS

3.1 To demonstrate qualifications to perform the Work, each Bidder must submit with the bid written evidence of previous experience and evidence of authority to conduct business in the jurisdiction where the Project is located. Each Bid must contain evidence of Bidder's qualification to do business in the state where the Project is located or covenant to obtain such qualification prior to award of the contract.

4. EXAMINATION OF CONTRACT DOCUMENTS AND SITE

4.1 Before submitting a Bid, each Bidder must (a) examine the Contract Documents thoroughly, (b) visit the site to familiarize himself with local conditions that may in any manner affect cost, progress or performance of the Work, (c) familiarize himself with federal, state and local laws, ordinances, rules and regulations that may in any manner affect cost, progress or performance of the Work; and (d) study and carefully correlate Bidder's observations with the Contract Documents.

4.2 Before submitting his Bid each Bidder will, at his own expense, make such investigations and tests as the Bidder may deem necessary to determine his Bid for performance of the Work in accordance with the time, price and other terms and conditions of the Contract Documents.

4.3 On request, the County will provide each Bidder access to the site to conduct such investigations and tests, as each Bidder deems necessary for submission of his Bid.

4.4 The lands upon which the Work is to be performed rights – of - way for access thereto and other lands designated for use by the Contractor in performing the work are identified in the General Conditions, General Requirements, Special Provisions or Drawings.

5. INTERPRETATIONS

5.1 All questions about the meaning or intent of the Contract Documents shall be submitted to the County Engineer. Replies will be issued by Addenda mailed or electronically delivered to all parties recorded by the County Engineer as having received the Bidding Documents. Oral and other interpretations or clarifications will be without legal effect.

6. CONTRACT TIME

6.1 The number of days within which, or the date by which, the Work is to be completed and the Bid price is to remain in effect is set forth in the Bid Form and will be included in the Agreement.

7. SUBSTITUTE MATERIALS AND EQUIPMENT

7.1 The Contract, if awarded, will be on the basis of material and equipment described in the Drawings or specified in the Specifications without consideration of possible substitute or "or-equal" items. Whenever it is indicated in the Drawings or specified in the Specifications that a substitute or "or-equal" item of material or equipment may be furnished or used by Contractor if acceptable to the County Engineer, application for such acceptance will not be considered by County Engineer until after the "effective date of the Agreement".

8. SUBCONTRACTORS, ETC.

8.1 No subcontract may be awarded by Contractor under this Contract to anyone without approval of the County. In order for such approval to be obtained the Contractor shall **submit with the bid** the **Name and Address** of the proposed subcontractor for verification. The proposed subcontractor must also submit, through the Contractor, the following documents in an acceptable form:

1. Copy of any subcontracts;
2. Certification by proposed subcontractor regarding equal employment opportunity;
3. Certification by proposed subcontractor concerning labor standards and prevailing wage requirements;
4. Any such other documents and evidence as the County may reasonably request to show that the subcontractor has fully complied with any reporting requirements to which it is or was subject.
5. Affidavit of Federal Employment Authorization to be completed and turned in by proposed subcontractors
6. Subcontractor shall have certificate of insurance with the same limits as the prime contractor listing Jefferson County Public Works as Additional Insured and as a certified holder. The endorsement is also required.
7. E-verify MOU in its entirety.

The documents by proposed subcontractors are not required to be attached to the Contractor's Bid.

9. BID FORM

9.1 The Bid Form is attached hereto; additional copies may be obtained from the County Engineer.

9.2 Bid Forms must be completed in ink or by typewriter or computer. The Bidder shall indicate, in figures, a unit price for each item on the form for each sub category. In case of discrepancy between the gross sum shown on the bid and that obtained by adding the products of the quantities of work and the unit prices, the bidder agrees that the unit prices shall govern, and any errors found in said products and gross sum may be corrected by the County.

9.3 Bids by corporations must be executed in the corporate name by the president or a vice-president (or other corporate officer accompanied by evidence of authority to sign) and the corporate seal must be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporation shall be shown below the signature.

9.4 Bids by partnerships must be executed in the partnership name and signed by a partner, whose title must appear under the signature and the official address of the partnership must be shown below the signature.

9.5 All names must be typed or printed below the signature.

9.6 The Bid shall contain an acknowledgment of receipt of all Addenda (the numbers of which shall be filled in on the Bid Form).

9.7 The address to which communications regarding the Bid are to be directed must be shown.

10. BID SECURITY

10.1 Bid Security shall be made payable to the Owner, in the amount of five percent of the Bidder's maximum Bid price and in the form of a certified or bank check or a Bid Bond (on form attached, if a form is prescribed) issued by a Surety.

10.2 The Bid security of the Successful Bidder will be retained until such Bidder has executed the Agreement and furnished the required Contract Security within 15 days of the Notice of Award. Failure to do so may result in the annulment of the Notice of Award and forfeiture of the Bid Security. The Bid Security of any Bidder whom the Owner believes to have a reasonable chance of receiving the award may be retained by the Owner until the earlier of the seventh day after the "effective date of the Agreement" (which is the date when the agreement has been executed by all parties) by Owner to Contractor and the required Contract Security is furnished or the sixty-first day after the Bid opening. Bid Security of other Bidders will be returned within seven days of the Bid opening.

11. SUBMISSION OF BIDS

11.1 **Bids shall be submitted, in triplicate**, at time and place indicated in the Invitation to Bid and shall be included in an opaque sealed envelope, marked with the Project title and name and address of the Bidder and accompanied by the other required documents. If the Bid is sent through the mail or other delivery system the sealed envelope shall be enclosed in a separate envelope with the notation "BID ENCLOSED" on the face thereof.

12. MODIFICATION AND WITHDRAWAL OF BIDS

12.1 Bids may be modified or withdrawn by an appropriate document duly executed (in the manner that a Bid must be executed) and delivered to the place where Bids are to be submitted at any time prior to the opening of Bids.

12.2 If, within twenty-four hours after Bids are opened, any Bidder files a duly signed written notice with the County and promptly thereafter demonstrates to the reasonable satisfaction of the County that there was a material and substantial mistake in the preparation of his Bid, that Bidder may withdraw his bid. Thereafter, that Bidder will be disqualified from further bidding on the Work.

13. OPENING OF BIDS

13.1 Bids will be opened publicly.

13.2 When Bids are opened publicly they will read aloud, and an abstract of the amounts of the base Bids and major alternates (if any) will be made available after the opening of Bids.

14. BIDS TO REMAIN OPEN

14.1 All Bids shall remain open for sixty days after the day of the Bid opening, but the County may at their sole discretion, release any Bid and return the Bid Security prior to that date.

15. BID SUBMITTAL REQUIREMENTS

15.1 Failure to submit the following required documents prior to the bid opening will make the bid non-responsive and not eligible for award consideration:

- Notice to Contractors
- Certification Regarding Anti-collusion

- Certification Regarding Use of Contract Funds for Lobbying
- Certification Regarding Debarment and Suspension
- Certification Regarding Affirmative Action and Equal Opportunity
- Bid Guaranty
- Acknowledgement of Addenda, if applicable
- Bid to be submitted in ink with proper signatures with no white out or initialed changes
- Balanced Bid
- Delinquent Taxes Affidavit or Proof of Payment
- Certificate of Insurance

16. AWARD OF CONTRACT

16.1 The County reserves the right to reject any and all bids, to waive any and all informalities, and the right to reject non-responsive bids with County Council concurrence.

16.2 In evaluating Bids, the County shall consider whether the Bid meets all requirements of the advertisement and proposal, and any alternates and all unit prices requested in the Bid forms are provided.

16.3 The County may consider the qualifications and experience of Subcontractors and other persons and organizations (including those who are to furnish the principal items of material or equipment) proposed for those portions of the work as to which the identity of Subcontractors and other persons and organizations must be submitted as provided. Operating costs, maintenance considerations, performance data and guarantees of materials and equipment may also be considered by the County.

16.4 The County may conduct such investigations as they deem necessary to assist in the evaluation of whether any Bid is responsive in accordance with the Contract Documents to the County's satisfaction within the prescribed time.

16.5 If the contract is to be awarded, the County will give the Successful Bidder a Notice of Award within sixty days after the date of the Bid opening.

17. LIQUIDATED DAMAGES

17.1 Provisions for liquidated damages, if any, are set forth in the agreement.

18. PERFORMANCE AND OTHER BONDS

18.1 Section 32 of the General Conditions set forth the County's requirements as to performance and other Bonds. When the Successful Bidder delivers the executed Agreement to the County it shall be accompanied by the required Contract Security.

19. SIGNING OF AGREEMENT

19.1 When the County gives a Notice of Award to the Successful Bidder, it will be accompanied by at least four unsigned counterparts of the Agreement and all other Contract Documents. Within fifteen days thereafter Contractor shall sign and deliver at least four counterparts of the Agreement to the County with all other Contract Documents attached. The County will return one executed Contract Agreement to the Contractor.

20. FAILURE TO EXECUTE AGREEMENT

20.1 Failure to execute the agreement and to file the acceptable contract bonds within 15 days after

the unexecuted agreement has been mailed to the bidder shall be just cause for the cancellation of the award and the forfeiture of the bid guaranty. A bidder failing to file an acceptable bid or contract bond from an approved surety or failing to execute the agreement within the time provided, resulting in a cancellation of the award to that bidder, disqualifies that bidder, and any other firm having common ownership or control with that bidder, from performing any work on the County project or projects which are the subject of that bid, as a prime contractor, a subcontractor or a supplier.

END OF INSTRUCTIONS TO BIDDERS

NOTICE TO CONTRACTORS

Sealed bids for the proposed work will be addressed and delivered to the office of The County Clerk, 729 Maple Street, Jefferson County Administration Center, Hillsboro, Missouri until 2:00 o'clock P.M. (CDST) on **June 7, 2016**, and at that time will be publicly opened. All bids shall be submitted in triplicate in an opaque sealed envelope, marked with the Project title, name and address of the Bidder, and accompanied by the other required documents. Bids submitted via fax or electronic will be rejected. Late Bids will not be accepted and will be returned to the sender, unopened. **PREBID MEETING will be held at 1403 Herculaneum, Industrial Drive, Herculaneum, Missouri on May 18th, from 1:00pm -2:30 pm.**

(1) PROPOSED WORK: The proposed work, hereinafter called the work, includes the remodeling of a single story slab on grade, pre-engineered steel building; with all steel siding and roof; with associated electrical/telecommunications, HVAC, and plumbing improvements. The contractor will be responsible for providing the materials and labor necessary to complete the project in a timely manner in accordance with these Specifications and Job Special Provisions. The contractor shall be responsible for arranging delivery of materials to job sites. The bid shall also include disposal of all waste and demolition materials.

(2) COMPLIANCE WITH CONTRACT PROVISIONS: The bidder, having examined and being familiar with the local conditions affecting the work, and with the contract, contract documents and the request for bid, including appendices, the special provisions and plans, hereby proposes to furnish all labor, materials, equipment, services, etc., required for the performance and completion of the work.

(3) PERIOD OF PERFORMANCE: If the bid is accepted, the bidder agrees that work shall be diligently prosecuted at such rate and in such manner as, in the judgment of the engineer, is necessary for the completion of the work within the time specified as follows in accordance with Sec 108:

Working Days: **75**

(4) LIQUIDATED DAMAGES: The bidder agrees that, should the bidder fail to complete the work in the time specified or such additional time as may be allowed by the engineer under the contract, the amount of liquidated damages to be recovered in accordance with Sec 108 shall be as follows:

Liquidated damages per day: **\$ 700**

(5) BID GUARANTY: The bidder shall submit a Bid Guaranty. The project bid bond form is included in the bid book. The bidder shall mark the box below to identify the type of Bid Guaranty.

- Paper Bid Bond
- Cashier's Check

(6) CERTIFICATIONS: By signing and submitting this bid, the bidder makes the certifications appearing in Sec. 102.18.1 of the 2011 Missouri Standard Specifications for Highway Construction (regarding affirmative action and equal opportunity), Sec. 102.18.2 (regarding disbarment, eligibility, indictments, convictions, or civil judgments), Sec. 102.18.3 (regarding anti-collusion), and Sec. 102.18.4 (regarding lobbying activities). Any necessary documentation is to accompany the bid submission, as required by these sections. As provided in Sec. 108.13, the contracting authority may terminate the contract for acts of misconduct, which includes but is not limited to fraud, dishonesty, and material misrepresentation or omission of fact within the bid submission.

(7) TAXES: No bid or proposal shall be awarded by Jefferson County unless the prospective Bidder provides proof that the Bidder does not owe delinquent real or personal property taxes to Jefferson County. The prospective Bidder is required to provide proof in the form of an original paid tax receipt issued by the Jefferson County Collector or a verified affidavit stating that the applicant does not own any real or personal property in Jefferson County. Tax receipts for the past 3 years are required and may be obtained at <http://jeffersonmo.devnetwedge.com/> or a notarized affidavit stating that the applicant does not own any real or personal property in Jefferson County on company letterhead.

Section 135.040 of the Jefferson County Code of Ordinances (Ord. No. 10-0411) requires that no bid or proposal shall be awarded by Jefferson County unless the prospective Bidder provides proof that the Bidder does not owe delinquent real or personal property, or that the Bidder does not own any real or personal property in Jefferson County. All delinquent real or personal property taxes shall be paid, in-full, prior to the award of any bid, or proof shall be provided that the

Bidder does not own any real or personal property in Jefferson County prior to the award of any bid. Jefferson County considers that the failure to pay any and all real or personal property taxes due Jefferson County, Missouri, the failure to report all real or personal property owned, held or used in Jefferson County, the failure to provide proof thereof, and/or the failure to keep said tax bills current shall be deemed a material breach of the contract and will subject the contract to immediate cancellation. All taxes, due and owing, must be paid in full at the time the bid is awarded by Jefferson County and remain paid during the entire term of the contract unless the prospective Bidder provides proof that the Bidder does not own real or personal property in Jefferson County. This requirement shall not apply to the award of bids for projects which are funded in whole or in part by Federal funds.

(8) MISSOURI DOMESTIC PRODUCT PROCUREMENT ACT: Bidder represents that the goods provided comply with Sections 34.350 to 34.359, RSMo, known as the Domestic Product Procurement Act. The Act encourages the purchase of products manufactured or produced in the United States, State of Missouri, and Jefferson County, Missouri. Bidder shall include proof of compliance with the Act with the bid when requested.

(9) ANTIDISCRIMINATION: The Contracting Authority hereby notifies all bidders that it will affirmatively insure that in any contract entered into pursuant to this advertisement, businesses owned and controlled by socially and economically disadvantaged individuals will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, religion, creed, sex, age, ancestry, or national origin in consideration for an award.

(10) PREVAILING WAGE (STATE ONLY): This contract requires payment of the prevailing hourly rate of wages for each craft or type of worker required to execute the contract as determined by the Missouri Department of Labor and Industrial Relations. The applicable State Wage Rates for this contract are detailed in the "Annual Wage Order" that is effective 10 calendar days prior to bid opening. These supplemental bidding documents have important legal consequences. It shall be conclusively presumed that they are in the bidder's possession, and they have been reviewed and used by the bidder in the preparation of any bid submitted on this project.

(11) WORKER ELIGIBILITY REQUIREMENTS: Execution of the construction contract for this project is dependent upon the awarded bidder providing an Affidavit of Compliance AND E-Verify Memorandum-of-Understanding (MOU) between the bidder and Department of Homeland Security to the Contracting Authority as required by section 285.530 RSMo. **The cover page and signature page of the E-Verify MOU and the Affidavit must be submitted with the bid.**

A sample Affidavit of Compliance can be found at the Missouri Attorney General's website at the following link:

http://ago.mo.gov/forms/Affidavit_of_Compliance.pdf

All bidders must also be enrolled in the E-Verify Program, and include their MOU prior to contract execution. Bidders who are not enrolled will need to go to the following website link and select "Enroll in the Program" to get started. After completing the program, they will receive their E-Verify MOU with Department of Homeland Security. This document will need to be printed out and kept on file so that a copy can be attached to the Affidavit of Compliance.

http://www.dhs.gov/files/programs/gc_1185221678150.shtm

This requirement also applies to subcontractors and contract labor, but this contract only requires submittal of the verification documents for the prime contractor. It is the prime contractor's responsibility to verify the worker eligibility of their subcontractors in order to protect their own company from liability as required by section 285.530 RSMo.

(12) OSHA TEN HOUR TRAINING REQUIREMENTS: Missouri Law, 292.675 RSMO, requires any awarded contractor and its subcontractor(s) to provide a ten-hour Occupational Safety and Health Administration (OSHA) Construction Safety Program (or a similar program approved by the Missouri Department of Labor and Industrial Relations as a qualified substitute) for their on-site employees (laborers, workmen, drivers, equipment operators, and craftsmen) who have not previously completed such a program and are directly engaged in actual construction of the improvement (or working at a nearby or adjacent facility used for construction of the improvement). The awarded contractor and its subcontractor(s) shall require all such employees to complete this ten-hour program, pursuant to 292.675 RSMO, unless they hold documentation on their prior completion of said program. Penalties, for Non-Compliance include contractor forfeiture to the Contracting Authority in the amount of \$2,500, plus \$100 per contractor and subcontractor employee for each calendar day such employee is employed beyond the elapsed time period for required program completion under 292.675 RSMO.

(13) ADDENDUM ACKNOWLEDGEMENT: The undersigned states that all addenda (if applicable) have been received, acknowledged and incorporated into their bid, prior to submittal. For paper bids, staple addenda to the bid in the appropriate part of the bid.

(14) SIGNATURE AND IDENTITY OF BIDDER: The undersigned states that the following provided information is correct and that (if not signing with the intention to bind themselves to become the responsible and sole bidder) they are the agent of, and they are signing and executing this, as the bid of

, which is the correct LEGAL NAME as stated on the contractor questionnaire (if applicable).

a) The organization submitting this bid is a(n) (1) individual bidder, (2) partnership, (3) joint venturer (whether individuals or corporations, and whether doing business under a fictitious name), or (4) corporation. Indicate by marking the appropriate box below.

sole individual partnership joint venture

partnership

joint venture

corporation, incorporated under laws of state of _____.

b) If the bidder is doing business under a fictitious name, indicate below by filling in the fictitious name

Executed by bidder this _____ day of _____ 20___.
[Signature]

THE BIDDER CERTIFIES THAT THE BIDDER AND ITS OFFICIALS, AGENTS, AND EMPLOYEES HAVE NEITHER DIRECTLY NOR INDIRECTLY ENTERED INTO ANY AGREEMENT, PARTICIPATED IN ANY COLLUSION, OR OTHERWISE TAKEN ANY ACTION IN RESTRAINT OF FREE COMPETITIVE BIDDING IN CONNECTION WITH THIS BID, AND THAT THE BIDDER INTENDS TO PERFORM THE WORK WITH ITS OWN BONAFIDE EMPLOYEES AND SUBCONTRACTORS, AND DID NOT BID FOR THE BENEFIT OF ANOTHER CONTRACTOR.

THE BIDDER ACKNOWLEDGES THAT THIS IS AN UNSWORN DECLARATION, EXECUTED UNDER PENALTY OF PERJURY UNDER THE LAWS OF THE UNITED STATES AND/OR FALSE DECLARATION UNDER THE LAWS OF MISSOURI, AND ANY OTHER APPLICABLE STATE OR FEDERAL LAWS. THE FAILURE TO PROVIDE THIS CERTIFICATION IN THIS BID MAY MAKE THIS BID NON-RESPONSIVE, AND CAUSE IT TO BE REJECTED.

THE BIDDER CERTIFIES THAT THE BIDDER'S COMPANY KNOWINGLY EMPLOYS ONLY INDIVIDUALS WHO ARE AUTHORIZED TO WORK IN THE UNITED STATES IN ACCORDANCE WITH APPLICABLE FEDERAL AND STATE LAWS AND ALL PROVISIONS OF MISSOURI EXECUTIVE ORDER NO. 07-13 FOR CONTRACTS WITH THE CONTRACTING AUTHORITY.

Check this box ONLY if the bidder REFUSES to make any or all of these certifications. The bidder may provide an explanation for the refusal(s) with this submittal.

Signature of Bidder's Owner, Officer, Partner or Authorized Agent

Please print or type name and title of person signing here

Attest:

Secretary of Corporation if Bidder is a Corporation

Affix Corporate Seal (If Bidder is a Corporation)

NOTE: If bidder is doing business under a fictitious name, the bid shall be executed in the legal name of the individual, partners, joint ventures, or corporation, and registration of fictitious name filed with the secretary of state, as required by sections 417.200 to 417.230 RSMo. If the bidder is a corporation not organized under the laws of Missouri, it shall procure a certificate of authority to do business in Missouri, as required by section 351.572 et seq RSMo. A certified copy of such registration of fictitious name or certificate of authority to do business in Missouri shall be filed with the Missouri Highways and Transportation Commission, as required by the standard specifications.

(15) SUBCONTRACTOR DISCLOSURE: Requirements contained within Sec 102.7.12 of the Missouri Standard Specification for Highway Construction shall be waived for this contract.

(16) PROJECT AWARD: This project will be awarded to the lowest, most capable bidder for each road sub category. The total of the unit costs does not represent a comparative number. Estimated final quantities will be used as multipliers to predict final cost. For the purpose of bid comparison, estimated final quantities will remain constant for all bidders regardless of varying product weights. Award will be determined by lowest final estimated cost, and may also include factors for bidder responsiveness, contractor capability, and performance abilities.

(17) PRIME CONTRACTOR REQUIREMENTS: The limitation in Sec 108.1.1 of the Missouri Standard Specifications for Highway Construction that "the contractor's organization shall perform work amounting to not less than 40 percent of the total contract cost" is waived for this contract. Instead, the less restrictive terms of the Federal Highway Administration's rule at Title 23 Code of Federal Regulations (CFR) § 635.116(a) shall apply, so that the contractor must perform project work with its own organization equal to and not less than 30 percent of the total original contract price. Second-tier subcontracting will not be permitted on this contract. All other provisions in Sec 108.1.1 et seq. of the Missouri Standard Specifications for Highway Construction shall remain in full force and effect, and shall continue to govern the contractor and its subcontractors, in accordance with the provisions of Title 23 CFR § 635.116.

(18) SALES AND USE TAX EXEMPTION: County of Jefferson, a tax exempt entity, will furnish a Missouri Project Exemption Certificate as described in Section 144.062 RSMo to the awarded contractor who in turn may use the certificate to purchase materials for a specific project performed for the tax exempt entity. Only the materials and supplies incorporated or consumed during the construction of the project are exempt. The certificate will be issued to the contractor for a specific project for a defined period of time.

ITEMIZED BID: The bidder should complete the following section in accordance with Sec 102.7. The bidder proposes to furnish all labor, materials, equipment, services, etc. required for the performance and completion of the work, as follows:

(Next Page)

BID FORM

TO: JEFFERSON COUNTY, MISSOURI
BID FOR: EMERGENCY MANAGEMENT OPERATION CENTER
PROJECT NO. PW16B021BLD

1. The undersigned BIDDER proposes and agrees, if this BID is accepted, to enter into an Agreement with the County in the form included in the Contract Documents to complete all Work as specified or indicated in the Contract Documents for the Contract Price and within the Contract Time indicated in this Bid and in accordance with the Contract Documents.
2. BIDDER accepts all of the terms and conditions of the Instructions to Bidders. This Bid will remain open for sixty days after the day of Bid opening. BIDDER will sign the Agreement and submit all documents required within fifteen (15) days after the COUNTY'S Notice of Award.
3. In submitting this Bid, BIDDER represents, as more fully set forth in the Agreement, that:
 - (a) BIDDER has examined the site and locality where the Work is to be performed, the legal requirements (federal, state and local laws, ordinances, rules and regulations) and the conditions affecting cost, progress or performance of the Work and has made such independent investigations as BIDDER deems necessary; and
 - (b) This Bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; BIDDER has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; BIDDER has not solicited or induced any person, firm or a corporation to refrain from bidding; and BIDDER has not sought by collusion to obtain for himself any advantage over any other Bidder or over the County.
4. Bidder will complete project for the following unit prices. It is understood that the quantities given for the following bid items are not guaranteed by the Jefferson County Public Works Department and are used solely for the purpose of comparing bids and awarding the contract, and may or may not represent the actual quantities encountered on the job: and that the sum of quantities listed below, multiplied by the unit price shall constitute the gross sum bid.

Emergency Management Operation Center- PW16B021BLD**Phase 2 Lump Sum Bid****Total Phase 2 Cost** \$ _____**Phase 3 Lump Sum Bid ******Total Phase 3 Cost **** \$ _____ **(Optional bid)****** Phase 3 is optional and may not be awarded if funding constraints.****NOTICE TO BIDDER** - Bidders must complete the above section in its entirety.

5. BIDDER agrees that the work will be completed within the working days assigned or the CONTRACTOR shall pay the COUNTY, not as a penalty but as **liquidated damages**, a sum equal to Seven Hundred **(\$700.00)** for each working or calendar day (excluding Saturdays, Sundays and Legal Holidays) elapsing between the expiration of such time limit plus such extensions as may be necessary to cover contingencies beyond the CONTRACTOR'S control and the date of the full completion.

The County reserves the right to negotiate additional terms for the time of completion with the successful bidder.

6. Communications concerning this Bid shall be addressed to the following:

Address: _____

7. The terms used in this Bid which are defined in the General Conditions of the Construction Contract included as part of the Contract Documents have the meanings assigned to them in the General Conditions.

8. **CERTIFICATIONS FOR FEDERAL JOBS:** By signing and submitting this bid, the bidder makes the certifications appearing in Sec. 102.18.1 of the 2011 Missouri Standard Specifications for Highway Construction (regarding affirmative action and equal opportunity), Sec. 102.18.2 (regarding disbarment, eligibility, indictments, convictions, or civil judgments), Sec. 102.18.3 (regarding anti-collusion), and Sec. 102.18.4 (regarding lobbying activities). Any necessary documentation is to accompany the bid submission, as required by these sections. As provided in Sec. 108.13, the contracting authority may terminate the contract for acts of misconduct, which includes but is not limited to fraud, dishonesty, and material misrepresentation or omission of fact within the bid submission.

9. BIDDER has examined copies of all the Contract Documents and of the following addenda:

Date: _____ Number: _____

(receipts of all of which is hereby acknowledged) and also copies of the Bid Notice and the Instructions to Bidders:

SUBMITTED on _____, 20____

By _____
(Corporation Name)

(State of incorporation)

By _____
(Name of person authorized to sign) _____ (Signature and typed)

(Title)

(Corporate Seal)

Attest _____
(Secretary) _____ (Signature and typed)

Business address: _____

Phone No.: _____

BID BOND

Suitable bid security in the amount of:

(\$_____) Dollars and equal to five (5%) percent as called for in the advertisement for bids which accompanies this proposal. This sum is to be forfeited to the County of Jefferson if the party or parties making the proposal fail to enter into a contract with the approved securities within fifteen (15) days after the Notice of Award has been made. The undersigned has examined the Plans and Specifications for the work to be done and has satisfied himself as to the work to be done and the conditions under which it must be carried out.

The Contractor shall commence work within three (3) days after the date of a written Notice to Proceed from the County and shall fully complete all work under this proposal within the scheduled time established by the Contract Documents. This proposal shall be equally binding to all heirs, administrators, executors, successors and assigns.

FIRM NAME _____

BY _____

TITLE _____

ATTEST _____

TITLE _____

ADDRESS _____

TELEPHONE _____

BIDDER'S ACKNOWLEDGMENT

(Complete and fill out all parts applicable, and strike out all parts not applicable)

STATE OF _____)
) SS.
COUNTY OF _____)

On this _____ day of _____ 20____, before me appeared _____ to me personally known, who, being by me first duly sworn, did say that he executed the forgoing Proposal with full knowledge and understanding of all its terms and provisions and of the plans and specifications; that the correct legal name and address of the Bidder (including those of all partners or joint ventures) is fully and correctly set out above; that all statements made therein by or for the Bidder are true; and

(if a sole individual) acknowledged that he executed the same as his free act and deed.

(if a partnership or joint venture) acknowledged that he executed the same, with written authority from, and as the free act and deed of, all said partners or joint venturers.

(if a corporation) that he is the _____
(President or other agent)

of _____; that the above Proposal was signed and sealed in behalf of said corporation by authority of its board of directors; and he acknowledged said proposal to be the free act and deed of said corporation.

Witness my hand and seal at _____, _____
The day and year first above written.

(SEAL) _____ Notary Public

My commission expires 20

ANNUAL WORKER ELIGIBILITY VERIFICATION AFFIDAVIT

(for joint ventures, a separate affidavit is required for each business entity)

On the ____ day of _____, 20____, before me appeared _____, personally known to me or proved to me on the basis of satisfactory evidence to be a person whose name is subscribed to this affidavit, who being by me duly sworn, stated as follows:

- I, the Affiant, am of sound mind, capable of making this affidavit, and personally certify the facts herein stated, as required by Section 285.530, RSMo, to enter into any contract agreement with the state to perform any job, task, employment, labor, personal services, or any other activity for which compensation is provided, expected, or due, including but not limited to all activities conducted by business entities.
- I, the Affiant, am the _____ of _____, and I am duly authorized, directed, and/or empowered to act officially and properly on behalf of this business entity.
- I, the Affiant, hereby affirm and warrant that the aforementioned business entity is enrolled in a federal work authorization program operated by the United States Department of Homeland Security, and the aforementioned business entity shall participate in said program to verify the employment eligibility of newly hired employees working in connection with any services contracted by the Jefferson County. I have attached documentation to this affidavit to evidence enrollment/participation by the aforementioned business entity in a federal work authorization program, as required by Section 285.530, RSMo.
- I, the Affiant, also hereby affirm and warrant that the aforementioned business entity does not and shall not knowingly employ, in connection with any services contracted by Jefferson County, any alien who does not have the legal right or authorization under federal law to work in the United States, as defined in 8 U.S.C. § 1324a(h)(3).
- I, the Affiant, am aware and recognize that, unless certain contract and affidavit conditions are satisfied pursuant to Section 285.530, RSMo, the aforementioned business entity may be held liable under Sections 285.525 though 285.550, RSMo, for subcontractors that knowingly employ or continue to employ any unauthorized alien to work within the state of Missouri.
- I, the Affiant, acknowledge that I am signing this affidavit as a free act and deed of the aforementioned business entity and not under duress.

Affiant Signature

Subscribed and sworn to before me in _____, _____, the day and year first above-written.
city (or county) _____ state _____

Notary Public

My commission expires:

[documentation of enrollment/participation in a federal work authorization program attached]

AGREEMENT FORM

THIS AGREEMENT is dated as of _____, in the year 2016 by and between JEFFERSON COUNTY, MISSOURI (hereinafter called OWNER OR COUNTY) and _____ (hereinafter called CONTRACTOR).

OWNER and CONTRACTOR, in consideration of the mutual covenants herein after set forth and in the amount of _____, agree as follows:

ARTICLE 1. WORK

CONTRACTOR shall complete all work as specified or indicated in the Contract Documents for the **Emergency Management Operation Center**. The work is generally described as follows:

The proposed work includes the remodeling of a single story slab on grade, pre-engineered steel building; with all steel siding and roof; with associated electrical/telecommunications, HVAC, and plumbing improvements. The contractor will be responsible for providing the materials and labor necessary to complete the project in a timely manner in accordance with these Specifications and Job Special Provisions. The contractor shall be responsible for arranging delivery of materials to job sites. The bid shall also include disposal of all waste and demolition materials.

ARTICLE 2. ENGINEER

The County has designated the Director of Public Works, who is hereinafter called ENGINEER and who has the authority assigned to OWNER in the Contract Documents in connection with completion of the Work in accordance with the Contract Documents.

ARTICLE 3. CONTRACT TIME

3.1 The County will issue a notice to proceed for purchasing materials to the CONTRACTOR 20 days before the notice to proceed with the work on site. The Contractor shall register their company as well as subcontractors with the City of Herculaneum as required by the City's permitting process. The Contractor will begin work on site and will continuously prosecute the work to the completion of the project. Allowance will be made for weather conditions and other occurrences beyond the control of the CONTRACTOR. **All work on the building site shall be completed in 75 working days.**

If the CONTRACTOR is unable to begin work as required, the ENGINEER shall be notified in writing. Unless the ENGINEER gives written approval for a delay in beginning the work, calendar days will begin to be counted for liquidated damages. The count will continue until the CONTRACTOR begins full operation. The count will resume when work is suspended, or full operation is not maintained.

3.2 Liquidated Damages. The Contractor agrees that should he fail to complete work in the time specified or such additional time as may be allowed by the Owner under this contract, the Contractor

shall pay the County, not as a penalty but as **liquidated damages**, a sum equal to **Seven Hundred (\$700.00)** for each working day (excluding Saturdays, Sundays and Legal Holidays) elapsing between the expiration of such time limit plus such extensions as may be necessary to cover contingencies beyond the CONTRACTOR'S control and the date of the full completion.

ARTICLE 4. CONTRACT PRICE

4.1 Owner shall pay Contractor for performance of the work in accordance with the contract documents in current funds.

Emergency Management Operation Center- PW16B021BLD

Phase 2 Lump Sum Bid

Total Phase 2 Cost \$_____

Phase 3 Lump Sum Bid **

Total Phase 3 Cost ** \$_____ **(Optional bid)**

**** Phase 3 is optional and may not be awarded if funding constraints.**

NOTICE TO BIDDER - Bidders must complete the above section in its entirety.

4.2 All costs associated with contractor licensing to the City of Herculaneum need to be included in the cost estimates above.

5.0 Contractor shall submit Application for Payment in accordance with Paragraph 23 of the General Conditions. The Engineer as provided in the General Conditions will process application for Payment. The Contractor shall utilize the Application and Certification for Payment, AIA Document G702, or comparable document for all Applications of Payment.

5.1 Progress Payment. Owner will make progress payments per the Contract Bid Price on the basis of the Contractor's Application of Payment as recommended by the Engineer, on or about the First day of each month during the construction as provided below. All progress payments will be on the basis of the Work measured on the job site according to unit of measurement as shown within the job special provisions or Missouri Standard Specifications.

5.1.1 The Owner may initiate withholding of retainage as provided by Section 109.9 of the Missouri Standard Specifications for Highway Construction. Release of any retained percentage shall be as provided by Section 109.9.

5.1.2 When the Contractor receives any payment from the Owner, the Contractor shall make prompt payment to subcontractors and suppliers as provided by Section 109.13 of the 2011 Missouri Standard Specifications for Highway Construction.

5.2 Final Payment. Upon final completion and acceptance of the Work in accordance with Paragraph 23 of the General Conditions, Owner shall pay the remainder of the Contract Price as recommended by the ENGINEER.

ARTICLE 6. CONTRACTOR'S REPRESENTATIONS

In order to induce the County to enter into this Agreement CONTRACTOR makes the following representations:

6.1 CONTRACTOR has familiarized himself with the nature and extent of the Contract Documents, Work, locality, and with all local conditions and federal laws, state and local laws, ordinances, rules and regulations that in any manner may affect cost, progress or performance of the Work.

6.2 CONTRACTOR has studied carefully all reports of investigations and tests of subsurface and latent physical conditions at the site of otherwise affecting cost, progress or performance of the Work which were relied upon by the ENGINEER in the preparation of the Drawings and Specifications. When the information is available it will either be included in the bid documents or made available at the Jefferson County Public Works Department for the Contractor's review.

6.3 CONTRACTOR has made or caused to be made examinations, investigations and tests and studies of such reports and related data in addition to those referred to in Article 9 as he deems necessary for the performance of the Work at the Contract Price, within the Contract Time and in accordance with the other terms and conditions of the Contract documents; and no additional examinations, investigations, tests, reports or similar data will be required by CONTRACTOR for such purposes.

6.4 CONTRACTOR has correlated the results of all such observations, examinations, investigations, tests, reports and data with the terms and conditions of the Contract Documents.

6.5 CONTRACTOR has given ENGINEER written notice of all conflicts, errors or discrepancies that he has discovered in the Contract Documents and the written resolution thereof by ENGINEER is acceptable to CONTRACTOR.

ARTICLE 7. CONTRACT DOCUMENTS

The Contract Documents which comprise the entire agreement between OWNER and CONTRACTOR are attached to this Agreement, made a part hereof and consists of the following:

- 7.1 This Agreement
- 7.2 Exhibits to this Agreement (if any)
- 7.3 Contract Performance and Payment and Materials Bonds, consisting of 3 pages.
- 7.4 Notice of Award

- 7.5 General Conditions (page 1 to 18, inclusive).
- 7.6 Specifications bearing the title PROJECT SPECIFICATIONS Emergency Management Operation Center- PW16B021BLD and consisting of all pages as listed in the table of contents thereof.
- 7.7 Addenda numbers __ to __, inclusive.
- 7.8 CONTRACTOR'S Bid and all attachments
- 7.9 Documentation submitted by CONTRACTOR prior to Notice of Award
- 7.10 Any Modification, including Change Orders, duly delivered after execution of agreement.

There are no Contract Documents other than those listed above in this Article 7. The Contract Documents may only be altered, amended or repealed by a Modification (as defined in Article 25 of the General Conditions).

ARTICLE 8. MISCELLANEOUS

8.1 Terms used in this Agreement which are defined in Article 1 of the General Conditions shall have the meanings indicated in the General Conditions.

8.2 No assignment by a party hereto of any rights under or interests in the Contract Documents will be binding on another party hereto without the written consent of the party sought to be bound; and specifically but without limitation, moneys that may become due and moneys that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

8.3 The County and CONTRACTOR each binds himself, his partners, successors, assigns and legal representatives to the other party hereto, his partners, successors, assigns and legal representatives in respect to all covenants, agreements and obligations contained in the Contract Documents.

ARTICLE 9. OTHER PROVISIONS

9.1 Access to records. In connection with this Contract the County shall have access to any books, documents, papers, and records of the CONTRACTOR, which are directly pertinent to this project for the purpose of making an audit, examination, excerpts, and transcriptions.

9.2 Applicable Laws and Regulations. The CONTRACTOR expressly agrees to comply with all

applicable rules and regulations as set forth in the Contract Documents or as may be required by law, and further agrees to submit all certifications, notices, and affirmative action plans as may now or hereafter be required, and to place such conditions and provisions in any and all subcontracts as may be required.

9.3 Conflict of Interest. The CONTRACTOR covenants that he or she presently has not interest of any kind and shall not acquire any type of interest, direct or indirect, in the program or any property therein, which would conflict in any manner or degree with the performance of his or her services and obligation hereunder. The CONTRACTOR further covenants that in the performance of this contract, no person known to have any conflicting interest shall be knowingly employed in the performance of this Contract.

ARTICLE 10. VENUE

10.1 It is agreed by the parties that any action at law, suit in equity, or other judicial proceeding to enforce or construe this Agreement, or regarding its alleged breach, shall be instituted only in the Circuit Court of Jefferson County, Missouri.

IN WITNESS WHEREOF, the parties hereto have signed this agreement in quadruplicate. All portions of the Contract Documents have been signed or identified by OWNER and CONTRACTOR or by ENGINEER on their behalf.

FOR: JEFFERSON COUNTY, MISSOURI

BY: _____ Date: _____
COUNTY EXECUTIVE

ATTEST: _____
COUNTY CLERK _____ DEPUTY CLERK

FOR: _____

BY: _____ Date: _____
CONTRACTOR

ATTEST: _____

I hereby certify under section 50.660 RSMo there is either: (1) a balance of funds, otherwise unencumbered, to the credit of the appropriation to which the obligation contained herein is chargeable, and a cash balance otherwise unencumbered, in the treasury, to the credit of the funds from which payment is to be made, each sufficient to meet the obligation contained herein; or (2) bonds or taxes have been authorized by vote of the people and there is a sufficient unencumbered amount of the bonds yet to be sold or of the taxes levied and yet to be collected to meet the obligation in case there is not a sufficient unencumbered cash balance in the treasury.

COUNTY AUDITOR

APPROVED AS TO FORM

COUNTY COUNSELOR

CONTRACT PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS, that we, the Undersigned _____

of
(firm)

*a (corporation) duly authorized by law to do business as a construction contractor in the
(partnership)

State of _____ (hereinafter called the "Contractor"), and _____

(hereinafter called the "Surety"), a corporation
duly authorized to do a Surety business under the laws of the State of Missouri, are held
firmly bound unto Jefferson County, (hereinafter called the "County"), in the penal sum
of _____ Dollars (\$_____), lawful money of the United States, for the
payment of which to be made unto said County, we bind ourselves, our heirs, executors,
administrators, successors and assigns, jointly and severally, firmly by these presents as
follows:

The conditions of this obligation are such that, whereas on the _____ day
of _____, 20____, the said Principal entered into a written Agreement, which
Agreement is hereby made a part hereof, with the said County for the construction of
_____.

NOW THEREFORE, if the said Principal shall faithfully and properly perform the
foregoing Contract according to all the terms thereof, and shall, as soon as the work
contemplated by said contract is completed, pay to the proper parties all amounts due for
all labor and material required by this contract in the construction work, and all insurance
premiums for both compensation and all other kinds of insurance on said work, and for
all labor performed in such work whether by subcontractor or otherwise, then this obligation
shall be void, otherwise it shall remain in full force and effect, and may be sued on for the

use and benefit by any person furnishing material or performing labor, either as an individual or as a subcontractor, for any contractor in the name of said County.

Every Surety on this bond shall be deemed held, any contract on the contrary notwithstanding, to consent without notice.

- a) To the extension of time to the Contractor in which to perform the contract.
- b) To changes in the plans, specifications, amount of work or contract.

IN TESTIMONY WHEREOF, the Parties hereunto have caused the execution hereof in _____ original counterparts as of the _____ day of _____, 20____.

(SEAL) _____

Attest:

_____ By _____

(SEAL) _____

Attest:

_____ By _____

GENERAL CONDITIONS

1. DEFINITIONS:

The following terms as used in these Contract Documents are respectively defined as follows:

- a) "Owner" A person, firm, corporation, municipality or Government agency, by which the Contract will be awarded. Where ever the Owner is specified, it shall also be construed to mean his authorized representative.
- b) "Consultant" The Engineering firm responsible for the preparation of construction plans.
- c) "Contractor" The person, firm, or corporation to whom the contract is awarded.
- d) "Subcontractor" A person, firm, or corporation, performing any part of the Contractor's obligations hereunder at the site of work excluding, however, the furnishing of standard materials, such as cement, lumber, and other materials not worked to a special design under the plans and specifications for the work.
- e) "Contract Documents" The agreement subscribed by the parties, the Invitation to Bidders, Information for Bidders, the Proposal, and the Plans and Specifications.
- f) "Work" The furnishing of all labor, materials, equipment and other incidentals necessary or convenient to the successful completion and carrying out of all duties and obligations of the Contractor under the Contract Documents.
- g) "Days" Except where otherwise specifically provided in the Contract Documents, calendar days including Sundays and Holidays.

NOTICE:

Unless otherwise specified herein, any notice required under the Contract Documents shall be deemed given if deposited in the United States mail, first class postage prepaid.

Notice may also be given by hand delivery to the authorized representative.

2. INTENT OF THE CONTRACT DOCUMENTS:

The intention of the Contract Documents is to include in the contract price the cost of all labor and materials, water, fuel, tools, plant, equipment, light, transportation and all other expense as may be necessary for the proper execution of the work.

In interpreting the Contract Documents, words describing materials of work which have a well-known technical or trade meaning, unless otherwise specifically defined in the Contract Documents, shall be construed in accordance with such well-known meaning recognized by architects, engineers and the trade.

The work shall be executed in strict conformity with the plans and specifications.

The Contract Documents are complimentary and what is called for by any one shall be as binding as if called for by all. Anything stated in the specifications and not shown in the drawings, or shown in the drawings and not stated in the specifications, shall be of like effect as if shown or stated in both.

3. PLANS:

Unless otherwise provided in the Contract Documents, the Owner will furnish the Contractor free of charge, one full size set of reproducible prints, one full size set of printed plans, one half size set of printed plans and one set of unbound specifications. The Contractor will be responsible for reproducing the plans necessary to carry out all the work. In addition to the prints and printed plans and specifications noted above, the Contractor may have all remaining sets of plan used for bidding purposes excluding those for use by County personnel.

In case of discrepancy in the plans, the matter shall be immediately submitted to the Consultant or Owner without whose decision said discrepancy shall not be adjusted by the Contractor, save only at his own risk and expense.

4. SUPERVISION AND PERSONNEL:

The Contractor shall have at the work site at all times a job supervisor. That individual shall be capable of reading and understanding the project plans and specifications, have authority to order materials and equipment, and have authority to execute work as directed by the Owner. The Contractor shall provide the name and phone numbers of the person appointed as job supervisor prior to issuance of notice to proceed.

All workers shall have sufficient skill and experience to properly perform the work assigned to them. The owner may demand the dismissal of any person employed by the contractor in, about or upon the work who engages in misconduct, is incompetent or negligent in the due and proper performance of

assigned duties, or who neglects or refuses to comply with any proper directions given. Such person shall not again be employed thereon without the written consent of the owner. Should the contractor continue to employ or re-employ any such person, the owner may suspend the work until the contractor complies with such orders.

5. COMPLIANCE WITH LAWS:

The Contractor shall comply with all laws, ordinances, rules and regulations bearing in the conduct of the work and shall obtain at his expense all permits and licenses necessary for the prosecution of the work.

The Contractor shall be responsible for the payment of all Federal, State, municipal or local taxes, including but not limited to sales and use taxes, applicable to the performance of the contract and shall indemnify and hold harmless the Owner from the consequences of his failure to pay such taxes.

A sales tax exemption for construction materials is allowed by RSMo Section 144.062 RSMo, which applies to contractors for the County. Jefferson County will issue an exemption certificate to the contractors, subcontractors and suppliers for the purchase of materials used in construction.

6. USE OF JOB SITE:

The Contractor shall confine his equipment, apparatus, the storage of materials and operations of his workmen to limits indicated by law, ordinance, permits, easements or plans and shall not encumber the premises with his materials.

The Contractor shall not load or permit any part of any structure to be loaded to the extent that its safety may be endangered.

7. SANITARY PROVISIONS:

The Contractor shall provide and maintain in a neat, sanitary condition such accommodations for the use of his employees as may be necessary to comply with the sanitary requirements of law or ordinance.

8. SURVEYS:

The Contractor shall provide all surveys necessary to the performance of his work. All work shall be done to the lines, grades and elevations shown on the plans. Any work done without being properly located may be ordered removed and replaced at the Contractor's expense.

The Owner or Consultant may, in his sole discretion, check from time to time the reference marks, lines, grades and measurements established by the Contractor but his exercise or failure to exercise such right shall not relieve the Contractor of his obligation under the preceding paragraph.

9. CONDITIONS AT THE SITE:

The Contractor shall make such investigations of conditions above or below the surface of the ground, as he may deem necessary for the proper and timely performance of his work, including but not limited to

the making of borings. No oral representations by any persons respecting such conditions shall in any manner be binding upon the Owner or the Consultant.

The Owner may have, for its own use, made borings at or near the site of the work. The boring data, if collected, will be made available to the Contractor, for his own convenience, if he desires to examine it.

Any interpretations or conclusions drawn by the Contractor from such data shall be his own and the Owner makes no representation or guaranty concerning the accuracy or completeness of such data.

10. UTILITIES AND OTHER OBSTRUCTIONS:

It shall be the sole responsibility of the Contractor in the performance of the contract to locate and avoid all utilities, other structures and obstructions whether located below or above the surface of the ground. For that purpose he shall employ all necessary precautions and methods to prevent damage to utilities, other structures and obstructions. In the event such damage does occur, the Contractor shall be solely liable therefore and he shall notify the affected utility and Owner immediately, make or have made all necessary repairs and bear the expense thereof and all damage caused thereby.

If the Contractor finds he cannot safely work at a location designated in the plans and specifications, either because of utilities, other structures or obstructions that may be damaged, he shall notify the Owner immediately.

Certain information relating to piping and underground utilities and structures, such as gas mains, water mains, and electric duct lines, has been gathered by the Consultant for its purposes and has been shown on the plans for the convenience of the Contractor and for such use as he may, at his own risk, desire to make of it. Any interpretations or conclusions drawn by the Contractor from such data on the plans shall be his own and the Owner and the Consultant makes no representations or guaranty concerning the accuracy or completeness of such data.

11. STRUCTURES ENCOUNTERED AND PROTECTION OF LIFE AND PROPERTY:

The Contractor shall, at his own expense, support and protect all buildings, bridges, conduits, wires, water pipes, sewers, pavements, curbing, sidewalks, equipment and fixtures of all kinds and all other public or private property that may be encountered or endangered in the execution of the work herein contemplated. He shall replace, repair or to otherwise make good any damage caused to any such property to the satisfaction of the Owner thereof.

In the event the Contractor does not perform his obligations under the preceding paragraph, the Owner reserves the right at its election to make good any damage to public or private property caused by the work of the Contractor and the cost thereof shall be borne by the Contractor.

In the event the Contractor refuses or fails to pay bills therefore upon presentation, the Owner may pursue any remedies available to it or may deduct the amount thereof from any money that may be due the Contractor hereunder from time to time.

Throughout the performance of the work, the Contractor shall construct and adequately maintain suitable and safe crossings over the trenches, and such detours as are necessary to care for the public and private traffic. The material excavated from trenches shall be deposited in such manner as shall give as little inconvenience as possible to the traveling public, to adjoining property owners, to other contractors or to the Owner.

The Contractor at his own expense shall provide the necessary watchmen and sufficient warning lights and barricades and take such other precautions as are necessary to protect life and property.

The Contractor shall provide watchmen or additional watchmen at any point where they may be requested by the proper official of any municipality or governmental body affected.

Nothing in this section shall be construed as requiring the Contractor to provide a road patrol.

12. PROTECTION OF WORK:

The Contractor shall provide proper facilities, take all necessary precautions and assume the entire cost for protecting the work against adverse weather conditions and for handling all storm and flood water, sewage, seepage, ice or snow that may be encountered during the performance of the contract and the manner for providing for such contingencies and for carrying on the work in freezing weather shall meet with the approval of the Owner. If the Contractor shall fail to provide such protection or in the event of emergencies, the Owner may provide such protection at the Contractor's expense.

The contractor assumes all risk of damage to or destruction of the work covered by this contract until the work is completed and accepted by the Owner and shall repair or replace at his expense any work damaged or destroyed prior to such completion and acceptance regardless of cause.

13. ACCIDENT PREVENTION:

Precaution shall be exercised at all times for the protection of persons (including employees) and property. The safety provisions of applicable laws and building and construction codes shall be observed.

14. OTHER CONTRACTS:

The Owner may award other contracts for additional work, and the Contractor shall fully cooperate with such other contractors, and carefully schedule and fit his own work to that work provided under the other contract. The Contractor shall not commit or permit any act, which will interfere with the performance of work by any other contractor.

15. CLEANING UP:

The Contractor shall at all times keep the premises free from accumulation of waste material of rubbish and at the completion of the work shall remove from and about the site all his rubbish, tools, equipment, scaffolding and surplus materials and shall leave his work clean and ready for use.

16. SURVEILLANCE:

The Contractor shall provide safe, sufficient and proper facilities at all times for the surveillance of work by the Consultant, the Owner, the Missouri Department of Transportation, the Federal Highway

Administration, or any other governmental agency, it being agreed that these agencies have the right of entry.

The Contractor shall within 24 hours after receiving written notice from the Owner proceed to remove all materials rejected by the Owner, whether worked or unworked, and take down all portions of the work, which shall be considered as unsound or improper, or in any way failing to conform to the plans and specifications.

Should it be considered necessary or advisable by the Owner at any time before acceptance of the entire work to make an examination of work already completed by removing or tearing out same, the Contractor shall, on written request, promptly furnish all necessary facilities, labor, and material for that purpose. If such work is found to be defective or nonconforming in any material respect, due to the fault of the Contractor or his subcontractors, he shall defray all the expenses of such examination and of satisfactory reconstruction. If, however, such work is found to meet the requirements of the contract, an equitable adjustment shall be made in the contract price to compensate the Contractor for the additional services involved in such examination and reconstruction and, if completion of the work has been delayed thereby, he shall, in addition, be granted a suitable extension of time.

Unless otherwise provided in this contract, acceptance by the Owner shall be made as promptly as practicable after completion of all work required by this contract. Acceptance shall be final and conclusive except as regards latent defects, fraud, or gross mistakes as may amount to fraud, or as regards the Owner's rights under any warranty or guarantee.

17. MATERIALS AND WORKMANSHIP:

Unless otherwise stipulated in the specifications, all workmanship, equipment, materials and articles incorporated in the work covered by this contract are to be new and of the best grade of their respective kinds for the purpose. When required by the plans and specifications, the Contractor shall furnish the Owner or Consultant, for approval, certified copies of test results made of the materials or articles, which he contemplates incorporating in the work. Samples of materials shall be submitted for approval when so directed. Machinery, equipment, materials and articles installed or used without such approval shall be at the risk of subsequent rejection.

If not otherwise provided, material or work called for in this contract shall be furnished and performed in accordance with established practice and standards recognized by architects, engineers and the trade.

18. "OR EQUAL CLAUSE":

Whenever, in these specifications or in any of the Contract Documents, any article, appliance, device or material is designated by a manufacturer's or vendor's or proprietary or trade name and such words are not followed by the condition "or equal", it shall be deemed that the words "or equal" do follow such designation unless the text clearly requires a contrary interpretation. Any article or material equaling the standards fixed may be used in place of that specifically mentioned by the specifications, provided that the material proposed is first submitted to and approved by the Owner or Consultant.

If by reason of the unavailability of material or equipment, a substitute item of material or equipment is approved by the Owner or Consultant, the Owner shall receive the benefit of any economy resulting from the substitution.

19. SCHEDULE AND PROGRESS REPORTS:

The Contractor shall, within 15 calendar days after date of notice to proceed, submit to the Owner five copies of a diagram covering operations in the work for the County's review and approval subject to update. The diagram will be used as a basis for review of monthly progress reports until the project is completed. At the request of the Owner, the diagram may be updated to demonstrate actual progress.

20. TIME OF COMPLETION AND LIQUIDATED DAMAGES:

The parties recognize that time is of the essence of this contract and, after the Contractor receives notice to proceed from the Owner, the work to be performed hereunder shall be commenced and shall be completed within the respective number of days specified in the proposal.

If the Contractor fails to complete the work within the time specified, or any extension thereof granted hereunder, the Contractor should pay the Owner the sum specified in the Contract for each calendar day (excluding Saturdays, Sundays, and Legal Holidays) the Contractor is in default. It is agreed that said daily sum is to be paid, not as a penalty, but as compensation to the Owner as liquidated damages for loss which the Owner will suffer because of such default through increased administrative and engineering costs and other tangible and intangible costs. Such damages may be at the Owner's option, be deducted from any monies held by it which are payable to the Contractor.

The completion of the work included under this Contract is defined for purposes of determining liquidated damages, as that time when all of the structures and appurtenances have been completed and tested and are, in the opinion of the Owner, ready for continuous permanent use and occupancy for the purposes intended, which includes all grading, cleaning up, or other minor work which is required to provide a completed project in accordance with the plans and specifications. The date shall be the date of a letter from the Owner to the Contractor indicating substantial completion or final acceptance.

21. EXTENSION OF TIME:

The Contractor shall not be entitled to any extension of time for completion of the work as herein above specified unless the Contractor, within 10 days from the beginning of any delay, notifies the Owner in writing of such delay and the cause thereof and the Owner shall determine:

- a. That such delay arises from unforeseeable causes beyond the control and without the fault or negligence of the Contractor, including but not restricted to, acts of God, acts of public enemy, acts of Government in either its sovereign or contractual capacity, acts of another contractor in the performance of a contract with the Owner, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, unusually severe weather, or delays of subcontractors arising from such unforeseeable causes beyond the control and without the fault or negligence of both the Contractor and such subcontractors; and
- b. That the Contractor cannot complete the work within the time specified solely by reason of such causes.

The Owner shall make a determination as soon as practicable after the Contractor's notice is received and shall decide the amount of additional time, if any, for completion of the work which conditions justify.

Any time extensions will require approval of the Missouri Highway and Transportation Department and the Federal Highway Administration, as well as the Owner.

22. FORFEITURE OF CONTRACT:

Should the Contractor at any time refuse, neglect or fail to supply a sufficient number of properly skilled workmen or sufficient equipment or materials of the proper quality, or execute the work with diligence and in accordance with approved schedules, or fail in the performance of any of the covenants herein contained, the Owner may, after three days written notice to the Contractor and his bonding company, provide any such labor, equipment or materials and deduct the cost thereof from any money then due or thereafter to become due to the Contractor under this contract.

Alternatively, the Owner, may after ten days written notice to the Contractor and his bonding company, terminate the employment of the Contractor for said works and enter upon the premises and take possession of all materials, tools and equipment thereon and finish or contract with others to finish the work. The Owner and such others may use such materials, tools and equipment to finish the work. The Contractor shall not be entitled to rental or other compensation for the use of his construction tools and equipment, but shall only be entitled to the return thereof in the condition existing when possession was taken, ordinary wear and tear excepted. In case of such discontinuance of the employment of the Contractor, the Contractor shall not be entitled to receive any further payment under this Contract until the said work shall be wholly finished, at which time, if the unpaid balance of the amount to be paid under this contract shall exceed the expenses incurred by the Owner to the Contractor, but if such expenses shall exceed such unpaid balance, the Contractor shall pay the difference from money then due or thereafter to become due to the Contractor under this contact. The expense incurred by the Owner as here provided for finishing the work and its cost incurred through such default shall be certified by the Consultant, whose certificate thereof shall be conclusive and binding upon the parties. The remedies of the Owner under this Article are exclusive of and in addition to any other contained in this contract, the Contractor's bonds, or provided by law.

23. PAYMENTS:

The Contractor shall receive as full compensation for all work hereunder a sum equal to the value of the work done based in his proposal, attached hereto and made a part of this contract.

Payment shall be made to the Contractor monthly, based upon the approved pay request. All Applications for Payment shall be submitted on the Application and Certificate for Payment form, AIA Document G702, or comparable. The final payment shall be paid to the Contractor, subject to approval of the final change order, within 30 days after completion and acceptance of the entire work herein contracted for, and upon receipt by the County, and approval of, all final documentation. Final documentation shall include the release by materials suppliers and subcontractors of having received full payment.

By the 15th of each month the Contractor shall submit to the Owner an invoice containing an estimate of the percentage of the total work under the contract accomplished to the end of such month. The invoice shall be in such form and detail as required by the Owner.

The requirements set forth in Section 109 of the Missouri Standard Specifications For Highway Construction for payments, retained percentage, release of retained percentage, prompt payment to subcontractors and suppliers and final payment shall apply to all contracts where the Federal Government is participating in the cost of construction.

24. PAYMENTS NO EVIDENCE OF PERFORMANCE:

No certificate for payment made under this contract except the final certificate of final payment, shall be evidence of the performance of this contract, either wholly or in part. No Payment shall be construed to be an acceptance of defective work or improper materials.

25. CHANGES:

The Owner and/or the Consultant shall have the right to make changes within the scope of the work or change the quantities of the work to be performed. No such change shall be valid unless made in writing by the Owner or Consultant, and for all Federal Aid Contracts such changes shall first be approved by both the Missouri Highway and Transportation Department and the Federal Highway Administration.

In the event such changes cause an increase or decrease in the Contractor's cost of or time required for performance of the contract, the contract price and/or period of performance shall be equitably adjusted; provided, the increase or decrease in the amount of the work for which unit prices apply under the specifications shall be computed by multiplying the change in quantities (measured as provided in the contract documents) of such work by such contract prices.

In the absence of a bid price for a given item of work not provided for nor fairly included in the bid prices for other items of work, a written agreement may be made between the Owner and the Contractor to be included in the written order for such extra work.

Whenever the Contractor and the Owner are unable to agree on prices for extra work and the Owner directly or acting through the Consultant orders the Contractor to proceed with the work by force account, the work will be paid for in the manner herein described and the compensation thus provided shall constitute full payment for said work. Payment will be determined as follows:

For all materials purchased by the Contractor and used in the force account work, he will be paid the actual cost of such materials, including sales taxes if required, and freight and delivery charges as shown by original receipted bills, to which will be added an amount equal to 15 percent if the sum thereof. The Owner or Consultant, however, reserves the right to approve or to reject the materials to be used and the sources of supply of any materials furnished by the Contractor.

For all equipment and machinery used in the force account work, the Contractor will be paid reasonable operated and maintained rental prices to which no percentages will be added.

The Contractor will be paid the cost of wages for all labor while engaged in the force account plus the actual cost chargeable to the force account work of workmen's compensation insurance, social security taxes, unemployment compensation insurance and such additional amounts as are paid by the Contractor by reason of an employment contract generally applicable to his employees, to which total sum will be added an amount equal to 15 percent of wages and other costs listed above. In evidence of the costs of labor, equipment and materials for which payment is to be made under the force account order; the Contractor shall provide a certified statement of wages actually paid, together with copies of supporting payrolls, of equipment rental charges, and of bills for materials.

Wage rates used in determining the amount of the payment will be the actual wage rates paid by the Contractor for work under this contract, except that no rate used shall exceed the rate of comparable labor

currently employed on the project.

Payment for services of foremen in direct charge of the specific operation will be made. Payment for the services of superintendents, timekeepers or other overhead personnel will not be made nor will payment for services of watchmen be made unless required specifically by the force account work. The actual function performed by an employee rather than his payroll title will be the criterion used in determining the eligibility of an employee's services for payment under this provision.

The types and amounts of equipment and machinery used by the Contractor in carrying out his work under the force account order shall be in keeping with normal practice for work of a similar nature, except that the Owner or Consultant may, at his discretion, limit by specific instruction the type and amounts of equipment and machinery to be used.

In computing the hourly rental of such equipment, less than 30 minutes shall be considered $\frac{1}{2}$ hour, except when the minimum rental to be paid shall be one hour. Rental time will not be allowed while equipment is inoperative due to breakdowns. The rental time of equipment to be paid for shall be the time the equipment is in operation on the force account work being performed, and, in addition, shall include the time required to move the equipment to the work and return it to its original location. When approved in advance by the Owner or Consultant, towing or transporting costs will be allowed when the equipment is moved by means other than its own power. No payment will be made for moving time, towing or transporting the equipment if it is used at the site of the work on other than force account work. No payment will be allowed for the use of small tools and minor items of equipment, which, as used herein, are defined as individual tools or pieces of equipment having a replacement value of \$50.00 each or less.

For additional premiums paid on Performance and Labor and Materials Bonds by reason of increases in the account of work over and above that called for in the original contract due to the inclusion of the force account work, and for additional premiums paid on Public Liability and Property Damage Insurance by reason of extra hazard inherent in the force account work of the type called for in the original contract, the Contractor will, on presentation of substantiating evidence from his bonding and insurance carriers, be paid the actual costs of the increase in premium, to which no percentages will be added. Payment for the cost of additional premiums paid on Workmen's Compensation Insurance by reason of extra hazard introduced into the Contractor's operations by the inclusion of force account work is covered by the provisions above, except that any claim for additional cost based on the application, by reason of extra hazard, of a higher insurance rate to any portion of the payroll over and above that chargeable to the force account work under the provisions above, must be substantiated by evidence from the Contractor's insurance carrier.

The Contractor and Owner shall compare records of the work performed on a force account basis at the end of each day. These records shall be prepared in triplicate by the Contractor and shall be signed by both the Owner and the Contractor's representative, one copy being retained by the Contractor and two copies retained by the Owner.

Payment for force account work will be included in monthly progress payments.

26. LIENS AND CLAIMS:

In addition to other remedies available the Owner hereunder, in all cases of non-payment by the Contractor or a subcontractor of any sums of money due for labor, materials, supplies, equipment or other items in performing in this contract, or if at any time there should be evidence of a lien or claim chargeable to the Contractor or a subcontractor for which, if established, the Owner might become liable, the Owner

is hereby authorized and empowered to retain out of any payment then due or thereafter to become due to the Contractor, an amount sufficient to indemnify the Owner against any such lien or claim.

Alternatively, without limiting other remedies and rights of the Owner under the Contract, under the Contractor's bonds or under the law, the Owner may withhold, in addition to the 10 percent retention, a sufficient amount of payments otherwise due to the Contractor to cover payments that may be past due and payable by the Contractor or his subcontractors or suppliers for just claims for labor or materials furnished in and about the performance of the work under this contract and for failure of the Contractor to make proper payments to his subcontractors. The Owner shall disburse and shall have the right to act as agent for the Contractor in disbursing such funds as have been withheld pursuant to this paragraph to the party or parties who are entitled to payment there from. The Owner will render the Contractor a proper accounting of all such funds disbursed in behalf of the Contractor.

Final payment nor any part of the retained percentage shall become due until the Contractor shall deliver to the Owner a complete waiver or release by himself and his subcontractors and others of all liens and claims arising out of the work, or receipts in full lieu thereof, and if required, an affidavit that so far as he has knowledge or information the releases and receipts include all the labor and materials for which a lien could be filed.

27. RESPONSIBILITY:

Nothing in the Contract Documents shall be construed as placing the work under the specific direction or supervision of the Owner or the Consultant or relieving the Contractor from his liability as an independent contractor and, as such, he shall perform his work, including, but not limited to, supervision and control of his own personnel and scheduling of the work as required to ensure its proper and timely performance, and he shall be solely responsible for the exercise of due care to prevent bodily injury and damage to property in the execution of the work.

The Owner or Consultant shall have the right of entry to the site for the purpose of verifying compliance with the plans and specifications.

28. INDEMNIFICATIONS AND INSURANCE:

Responsibility for Claims for Damage or Injury

The Contractor and surety shall indemnify and save harmless the County, and its members, agents and employees from all claims or suits made or brought for personal injury, death or property damage, caused or contributed to be caused by:

- (a) The negligence of the contractor, subcontractors, suppliers or their respective officers, agents or employees;
- (b) The creation or maintenance of a dangerous condition of or on the County's property or right of way, which condition occurred at least in part due to the acts or omissions of the contractor, subcontractors, suppliers or their respective officers, agents or employees; or
- (c) The failure of the contractor, subcontractors, suppliers or their respective officers, agents or employees, to perform the work in accordance with the plans and specifications.

Neither the County nor the Contractor, by execution of a contract, shall intend to or create a new or enlarge an existing cause of action in any third party. This provision shall not be interpreted to create any new liability which does not exist under the statutory limited waiver of sovereign immunity, or to waive or extinguish any defense which either party to this contract or their respective agents and employees may have to an action or suit by a third party.

Contractor's Responsibility for Work

Until the County accepts the work, it shall be in the custody and under the charge and care of the Contractor. The Contractor shall restore and replace, at the Contractor's expense, any lost or stolen County-owned material in the Contractor's custody or control. Damages to any portion of the work before its completion and acceptance, caused by the action of the elements or from any other reason, shall be restored or replaced at the Contractor's expense. Issuance of a payment estimate on any part of the work done will not be considered as final acceptance of any work completed up to that time. The County may, in its discretion, make such adjustments as it considers being proper for damage to the work due to unforeseeable causes beyond the control of, and without fault or negligence on the part of the Contractor.

Liability Insurance Requirements

The Contractor shall procure and maintain at its own expense, until acceptance of the project by the County, liability insurance for all damages and losses imposed by law and assumed under the contract, of the kinds and in the amounts specified in the relevant sections shown herein. Before the Contractor commences the work, the Contractor shall require the insurance company or companies to furnish to the County evidence of such insurance showing compliance with these specifications. All insurance required herein shall be occurrence policies in a form acceptable to the County, and shall remain in force until all work required to be performed under the terms of the contract is satisfactorily completed as evidenced by its formal acceptance by the County.

Each policy or its declaration pages shall provide that the policy shall not be materially changed or canceled until the County has been given at least 30 days advance notice in writing. If any policy is canceled before the contract work is complete, a satisfactory replacement policy must be in force, with notice and evidence of insurance submitted to the County, prior to the effective date of cancellation of the former policy. All evidence of insurance and notices shall be submitted to: Director of Public Works, Jefferson County Public Works Department, 725 Maple Street, PO Box 100, Hillsboro, Missouri 63050. **The Contractor shall furnish the County with a complete copy of the policy prior to the time the Contractor commences work on the site of the project.** Failure to furnish evidence of proper insurance, or complete insurance policies will result in temporary suspension of work and may result in other claims or actions for breach of contract or otherwise, as may be recognized at law or in equity.

Workers' Compensation Liability Insurance

The Contractor shall furnish evidence to the County that, with respect to the operations it performs, it carries workers' compensation insurance, or is qualified as self-insured, sufficient to comply with all its obligations under state laws relating to worker's compensation. The Contractor shall also require each subcontractor on the project to furnish the same evidence to the County. This evidence shall be furnished to and approved by the County prior to the time the Contractor or the subcontractor commences work on the site of the project.

Commercial General Liability Insurance

The Contractor shall obtain one or more occurrence-based policies of commercial general liability insurance (Form CG 00 01 or equivalent), which provide coverage for the contract work. The minimum limits of liability for commercial general liability insurance shall be: \$1,000,000 each bodily injury or property damage occurrence, combined single limit, \$2,000,000 general aggregate with a per project endorsement and \$1,000,000 products/completed operations aggregate. Each such policy shall be endorsed so as to cover liability arising from blasting if applicable, other inherently dangerous activities and underground property damage. Each such policy shall be endorsed to include broad form general liability, contractual liability and completed operations coverage.

Commercial Auto Liability Insurance

The Contractor shall obtain one or more occurrence-based policies of auto liability insurance, which provide for its owned, non-owned and hired vehicles of every type and description, which are used in the contract work. The minimum limits of liability for such insurance shall be \$1,000,000 combined single limit.

Additional Insureds

Each such policy of commercial general liability insurance shall name the County of Jefferson and its employees as additional insureds. Each commercial general liability insurance policy shall also contain a separation of insureds condition. The insurance afforded by the Contractor shall be primary insurance.

Subcontractor's Coverage

If any part of the contract is subcontracted, each subcontractor, or the Contractor on behalf of the subcontractor, shall obtain the same commercial general liability insurance and commercial automobile liability insurance coverage. The commercial general liability insurance shall name the same entities specified above as additional insureds, and shall have the same separation of insureds conditions.

Railroad Protective Liability Insurance

In addition to other required liability insurance, the Contractor shall provide railroad protective liability insurance if applicable, for and in behalf of the railroad as outlined in provisions for each project. The insurance policy shall be submitted to the County in original and duplicate for approval. No work will be permitted on the railroad right of way until such approval is granted.

Insurance with Other Than Missouri Companies

Any insurance policy required as specified above, if written by an insurance company organized in a state other than Missouri, shall be signed by an agent or broker licensed by the State of Missouri. In the case of policies written by companies organized in a state other than Missouri, the evidence of insurance submitted as authorized in the contract shall be signed by an agent or broker licensed by the State of Missouri. Nothing in this provision limits or waives the requirement that each insurance policy must be issued by a company authorized to issue such insurance in Missouri.

Third Party Liability

Neither the State of Missouri, the County of Jefferson nor the Contractor, by execution of the contract including these specifications, intend to create a right of action in a third party beneficiary except as specifically set out in these specifications and the contract. It is not intended by any required contractual liability in the contract or in these specifications that any third party beneficiary has a cause of action arising out of the condition of the project when completed in accordance with the plans and accepted by the County.

Personal Liability of Public Officials

There shall be no personal liability upon the County, or any member, employee or agent of the County in carrying out any of the provisions of the contract or in exercising any power or authority granted to them, it being understood that in such matters they act as agents and representatives of the County, with official and public duty doctrine immunity. If any provision of the contract appears to impose a duty on such an individual, the duty remains exclusively that of the County and is not a personal duty or obligation of the individual.

29. BOND:

The Contractor at his expense shall, before commencing work hereunder, procure and deliver to the Owner a Performance Bond and a Labor and Materials Payment Bond in the amount of 100% of the contract as awarded, as security for the faithful performance of the contract and the payment of all obligations thereunder by the Contractor and his subcontractors. The Bonds shall be written in such form as may be satisfactory to the Owner and provided by a guaranty or surety company listed in the latest issue of U.S. Treasury Circular 570 and the penal sum shall be within the maximum specified for such company in said Circular 570. In substance, the condition of the obligation under said bond or bonds shall be as follows:

“The condition of this obligation is such that if the above bound Principal shall in all respects comply with the terms and conditions of said contract and his obligations thereunder, including the specifications and plans referred to therein, and such changes and alterations as may be made in said contract, specifications and plans and shall indemnify and save harmless the Owner against or from all costs, expenses, damages, injuries or losses to which the said Owner may be subjected by reason of any wrongdoing, misconduct, want of care or skill, negligence of default on the part of said Principal, his subcontractors, officers, agents or employees, in the execution of performance of said contract and shall promptly pay all just claims for damages for injury to property and for labor, equipment, materials and supplies incorporated in the work or consumed in the performance thereof incurred by said Principal, his subcontractors, officers, agents or employees, in or about the construction or improvement contracted for, then this obligation shall be void; otherwise, to remain in full force and virtue in law. The Surety hereby waives notice of any changes, alterations or modifications, including any extensions of the period of performance, in the contract, specifications and plans.”

If any surety upon any bond furnished in connection with this contract becomes unacceptable to the Owner, or if any such surety fails to furnish reports as to his financial condition from time to time as requested by the Owner, the Contractor shall promptly furnish such additional security as may be required from time to time to protect the interests of the Owner and of persons supplying labor or materials in the prosecution of the work contemplated by this contract.

30. ASSIGNMENT, SUBLetting OR SUBCONTRACTING:

The Contractor shall not assign, sublet or subcontract this Contract or the work or payments due thereunder, in whole or in part, without the express consent of the Owner.

The Owner's consent to subcontract shall not relieve the Contractor from his obligations hereunder or change the terms of this agreement.

31. ROYALTIES AND PATENTS:

The Contractor shall indemnify, defend and save harmless the Owner and the Consultant from all liabilities, decrees, judgments, claims or disbursements, including attorney fees and/or damages and expenses which may come against or be incurred by the Owner or the Consultant by reason of the use of any patented material, machinery, devices, equipment or processes furnished or used in the performance of the work under this contract or the use by the Owner of the completed structure or by reason of the use of patented designs furnished by the Contractor and accepted by the Owner. In the event any claim, action at law or suit in equity of any kind whatsoever is made or brought against the Owner, the Owner shall have the right, without impairment of the foregoing indemnification, to retain from the money due and to become due said Contractor a sufficient amount of money to protect itself against loss.

32. SPECIFICATION CONFLICTS:

Where any provision of specifications referred to or incorporated into the Contract Documents is inconsistent or in conflict with the provisions of the Contract Documents, the provisions of the Contract Documents shall govern.

33. STANDARDS:

Where materials and methods are indicated in the specifications as being in conformance with a standard specification, reference in all cases shall be to the latest edition of the specification and shall include all interim revisions, unless specifically stated otherwise.

34. FEDERAL EMPLOYMENT AUTHORIZATION:

The Contractor shall comply with the requirements of the revised Statutes of the State of Missouri Chapter sections 285.525 to 285.555. If any part of the contract is subcontracted, each subcontractor shall comply with the same requirements of this specification.

No Contractor shall knowingly employ, hire for employment, or continue to employ an unauthorized alien to perform work within the state of Missouri.

As a condition for the award of the contract the Contractor shall, by sworn affidavit and provision of documentation, affirm its enrollment and participation in a federal work authorization program with respect to the employees working in connection with the contracted services. Every such Contractor shall also sign an affidavit affirming that it does not knowingly employ any person who is an unauthorized alien in connection with the contracted services.

A Contractor may enroll and participate in a federal work authorization program and shall verify the employment eligibility of every employee in the Contractor's hire whose employment commences after the Contractor enrolls in a federal work authorization program.

A general contractor or subcontractor of any tier shall not be liable under sections 285.525 to 285.550 when such general contractor or subcontractor contracts with its direct subcontractor who violates subsection 1 of this section, if the contract binding the contractor and subcontractor affirmatively states that the direct subcontractor is not knowingly in violation of subsection 1 of this section and shall not henceforth be in such violation and the contractor or subcontractor receives a sworn affidavit under the penalty of perjury attesting to the fact that the direct subcontractor's employees are lawfully present in the United States.

35. OSHA TRAINING:

The Contractor shall comply with the requirements of the revised Statutes of the State of Missouri Chapter sections 292.675. If any part of the contract is subcontracted, each subcontractor shall comply with the same requirements of this specification.

Any Contractor signing a contract to work on the construction of public works for the Owner shall provide a ten-hour Occupational Safety and Health Administration (OSHA) construction safety program for their on-site employees which includes a course in construction safety and health approved by OSHA or a similar program approved by the department which is at least as stringent as an approved OS11A program. All employees are required to complete the program within sixty (60) days of beginning work on such construction project.

Any employee found on a worksite subject to this section without documentation of the successful completion of the course required under this section shall be afforded twenty (20) days to produce such documentation before being subject to removal from the project. The contractor shall forfeit as a penalty to the Owner two thousand five hundred dollars (\$2,500) plus one hundred dollars (\$100) for each employee employed by the contractor or subcontractor, for each calendar day, or portion thereof, such employee is employed without the required training. The penalty shall not begin to accrue until the time period in this section has elapsed.

The Owner shall withhold and retain all sums and amounts due and owing as a result of any violation of this section when making payments to the contractor under the contract. The contractor may withhold from any subcontractor, sufficient sums to cover any penalties the Owner has withheld from the contractor resulting from the subcontractor's failure to comply with the terms of this section. If the payment has been made to the subcontractor without withholding, the contractor may recover the amount of the penalty resulting from the fault of the subcontractor in an action maintained in the circuit court in the county in which the public works project is located from the subcontractor.

In determining whether a violation of this section has occurred, and whether the penalty of this section shall be imposed, the Department of Labor and Industrial Relations shall investigate any claim of violation. Upon completing such investigation, the Department shall notify the Owner and any party found to be in violation of this section of its findings and whether a penalty shall be assessed. Determinations under this section may be appealed in the circuit court in the county in which the public works project is located. The Department may establish rules and regulations for the purpose of implementing the provisions of this section.

This section shall take effect on August 28, 2009.

END OF GENERAL CONDITIONS

General Special Provisions

Table of Contents

AFFIDAVIT OF COMPLIANCE WITH PREVAILING WAGE LAW

COOPERATION WITH UTILITIES

SUBLETTING, WARRANTIES, GUARANTEES, INSPECTION & TRAFFIC CONTROL

AFFIDAVIT COMPLIANCE WITH THE PREVAILING WAGE LAW

Before me, the undersigned Notary Public, in and for the County of _____, State of _____, personally came and appeared _____
(Name)

_____ of _____

(Title) (Company Name)

(a corporation)(a partnership)(a proprietorship) and after being duly sworn did depose and say that all provisions and requirements set out in Chapter 290, Sections 290.210 through and including 290.340, Missouri Revised Statutes, pertaining to the payment of wages to workers employed on public works projects have been fully satisfied and there has been no exception to the full and complete compliance with said provisions and requirements with Wage Determination No. _____ or Annual Wage Order No. _____ issued by the Division of Labor Standards on project _____,

(Job Number)

_____,
(Route or location, if building construction)

_____ County, Missouri, and completed on the _____ day of _____, 20____.

Signature

Subscribed and sworn to me this _____ day of _____, 20____.

My commission expires _____, 20____.

Notary Public

(Revised 03-23-00)

COOPERATION WITH UTILITIES

All utility facilities and appurtenances within the project limits shall be located or relocated by the utility owner, unless otherwise specified. Locations of these utilities will be provided by the utility owners and may not be exact, particularly with regard to underground installations. The contractor shall call for locates prior to the start of any work.

The contractor shall lead the efforts to coordinate with utility owners and the engineer in the location and relocation of utility facilities to minimize effects upon the contractor's work, interruption to utility service and duplication of work by the utility owners. Facilities or appurtenances that are to remain in place during construction shall be accounted for and protected by the contractor's work procedures.

In the event utility services are interrupted as a result of damage within the project limits, the contractor shall notify the appropriate utility authorities and cooperate with the utility owners until service has been restored. Work shall not begin around fire hydrants until provisions for continued service have been made and approved by the local fire authority.

When the failure of the owners of utility facilities to cooperate and coordinate their work with that of the contractor results in actual delay to the contractor in the overall completion of the contractor's work, such delay will be considered in the count of working days or date specified for completion as contractor's sole compensation from the County, provided the contractor notified the engineer in writing of the delay at the time the delay occurred.

The contractor shall use every precaution to prevent damage to all public and private utilities. Repairs to damaged utilities caused by negligent or wrongful acts or omissions on the part of the contractor shall be corrected at the contractor's expense. Damaged facilities shall be restored to a condition similar or equal to that existing before the damage occurred. The utility will designate who shall repair the damaged facility and the contractor shall not make repairs without utility approval.

Should there be located within the right of way any public or private utility facilities that are to remain in place and which will interfere with the contractor's proposed methods of operation, the contractor, in cooperation with the engineer, shall make all necessary arrangements with the owner for any temporary or permanent removal or relocation of such facilities desired for the contractor's convenience. Any cost involved shall be at the contractor's expense.

If utility facilities or appurtenances are found that are not noted in the contract documents and could not be discovered in accordance with [Sec 102.5 of the Missouri Standard Specifications](#), the engineer shall be notified in writing as soon as possible of the conflict and will determine whether relocation of the utility is necessary to accommodate construction. If relocation is necessary, the contractor will make the necessary arrangements with the utility owner. Compensation for the relocation of utilities will be worked out between the County and the utility owner prior to the relocation of any utility. No additional compensation will be made to the contractor for coordinating the location and/or relocation of utilities.

SUBLETTING OR ASSIGNING THE CONTRACT

The bidder is specifically advised that any person, firm or other party to whom it is proposed to award a subcontract under this contract must be acceptable to the County.

Second tier subcontracting will not be permitted on this project. It will be the responsibility of the Contractor to insure that his subcontractors do not, in turn, subcontract any portion of the work.

The Contractor shall furnish to the County a signed copy of all subcontracts at or before the pre-construction meeting. This applies to Federal and local projects.

The Prime Contractor must perform with it's own organization, contract work amounting to not less than 30% of the total original contract price. This applies to Federal and local projects.

WARRANTIES AND GUARANTEES

Clauses that require the contractor to guarantee materials and workmanship and otherwise maintain the work for a specified period after satisfactory completion and final acceptance will not be approved. This is not even permissible as a non-participating bid item.

Routine warranties or guarantees provided by a manufacturer are valid. Contractors' warranties or guarantees providing for satisfactory in-service operation of mechanical and electrical equipment and relates components for a period not to exceed six (6) months following project acceptance are permissible.

INSPECTION BY JEFFERSON COUNTY

The Contractor shall assure that representatives of the County shall have the opportunity at any time to inspect and review the work done by the Contractor and his subcontractors on this project and shall grant them access to all parts of the work. Contractor must follow the requirements for contractor/ subcontractor certification as set by the City of Herculaneum.

MATERIAL TESTING

All project sampling and testing of materials shall be performed by the County or by a consultant employed by the County. The Contractor shall assure representatives of the County or consultants employed by the County have had the opportunity to sample and test materials used on this project. Acceptance testing specified to be conducted by County or Consultant hired by County. Costs associated with providing the sample materials shall be incidental to the cost of the project.

TRAFFIC CONTROL

The Traffic Control Plan for this project must follow the Federal Highway Administration's Manual On Uniform Traffic Control Devices (MUTCD 2009) for all traffic control operations.

#1 Parkwood Court, Herculaneum, Mo. 63048**Phone: (636) 475-4447 Fax: (636) 475-6191****Email: cityofherky@cityofherculaneum.org****Fax****To:****Fax:****ATTN:****Phone:****From:** Pamela Gross**Pages:** () page(s) includes top fax sheet

Public Works Assistant

Re: Contractor's License application**Date:**

Urgent **For Review** **Please Comment** **Please Reply** **Please Recycle**

● **Comments:** YOU MAY FAX A COPY OF ALL THE REQUESTED BACK TO ME ASAP, and I will start the process for your Contractor License.

I am faxing you a copy of a Contractor's License application. We require a **front sheet copy of your workers comp insurance (certificate) if your company is required to carry it** and a **front sheet copy of your certificate of liability insurance**. Please make sure the application is filled out completely and signed. You may fax it back if you wish, so I can run a Better Business Bureau check, of which I am required to do before issuance of said license. The license requires a \$100.00 yearly fee. License run from Nov. 01, 20XX to October 31, 20XX of the following year. If you are in need of any further assistance, please contact me as soon as possible. Your license will run from the time you submit and pay for your license to the following Oct. 31, 20 .

The State of Missouri also requires Herculaneum to request **an affidavit signed & notarized from your company stating that you do not and will not employ illegal aliens**, the affidavit also states that your company owes **NO SALES TAX DUE TO THE STATE OF MISSOURI**, or you may acquire a certificate of **NO SALES TAX DUE** from the State of Missouri by calling (573) 751-9268

If you wish to do work in our City after October 31, 20____, you will need to renew your Contractor's License.

Building & Code Official Note: for Flat work that there is no need for a Permit Application. However, you wish to construct or build and you're not sure whether you need a permit or not, please contact us and we will let you know if one is required. Thank you for your cooperation in this matter.

Respectfully Submitted,

Pam Gross/Public Works Assistant

636-475-4447 or 4448 ext. 114

For: Dodie Graves, Bldg. & Code Enforcement

APPLICATION FOR CONTRACTOR'S LICENSE**City of Herculaneum, Missouri****#1 Parkwood Court, Herculaneum, Mo. 63048****Phone: 636-475-4447 & Fax: 636-475-6191 Email: cityofherky@cityofherculaneum.org**New Application: Renewal:

Date: _____ Business Name: _____

Business Address: _____

Mailing Address: _____

Business Phone: _____ Tax ID #: _____ # Employees: _____

Plumbers-Electricians-Mechanicals must have a license in one of these areas: Jefferson

County, St. Louis County or City, St. Peters or St. Charles: Number(s) _____

Owner/Employer's Name: _____ Drivers Lic: _____

Home Address: _____ Home Phone: _____

U.S. Citizen: Yes () No () Naturalized Citizen () _____

General Description of Sales and/or Service at this location: _____

_____Please list any possible hazards such as chemicals stored, animals on premises or
irregular hours: _____

Name of person who owns the property if you are renting: _____

Certificate of Worker's Compensation Insurance:This is to certify that the Employer named above is is not required to purchase
Workers' Compensation Insurance under Chapter 287 RSMo. 1966 as amended.If such Employer named above is required to cover his liability under Chapter 287
RSMo. Then such coverage has been:Issued Renewed Canceled Sole Proprietor Partnership Corporation

Carrier's Name: _____

Address: _____

Policy #: _____ Effective Date: _____ Expires: _____

Signature of Applicant: _____

License Fee: \$100.00**Nov. 01, 20XX to Oct. 31, 20XX****Note:** The Affidavit needs to be notarized (1) stating that your Company does not/and will not employ any illegal aliens (2) Your company does not owe Sales Tax to the State of Missouri.Due to a recent Ordinance Change, Herculaneum requires your Company to submit Licensing Number(s) of your profession showing that your Company is licensed in one of these following areas: Jefferson County, St. Louis County or City, St. Peters or St. Charles before your Company may do work in our Township. Thank you for your cooperation.

Pursuant to the requirements of House Bill No. 1549 of the State of Missouri, and further pursuant to the requirements of Sections 67.0307, 285.530, 285.535 and 285.550 of the Revised Statutes of Missouri, the undersigned business hereby affirms that it **does not employ illegal immigrants**.

The undersigned further acknowledges that if the City receives notice from either a court or the Attorney General's Office or determines that a business has violated Section 285 of the Revised Statutes of Missouri, that the City is required to suspend the business license within fifteen (15) days of receiving such notification. **Self-employed individuals with no employees are excluded from this law.**

Name of BusinessBy: _____
Signature

The legislature enacted Senate Bill 30 providing for the following requirement for local licenses:

Section 114.083.2 RSMo, "The possession of a retail sales license and **a statement from the Department of Revenue that the licensee owes no tax due under sections 144.010 to 144.510 or sections 143.919 to 143.261, RSMo** shall be prerequisite to the issuance of renewal of any City or County occupation license, which is required for conducting any business where goods are sold or retail." This is effective January 01, 2009

The undersigned Herculaneum City licensed business hereby affirms that they **owe no sales tax** to the Missouri Department of Revenue due to retail sales. The undersigned further acknowledges that if the City receives notice from either a court or the Attorney General's Office or determines that a business has violated the above sections of the Revised Statutes of Missouri, that the City is required to suspend the business license upon receiving such notification.

Name of BusinessBy: _____
Signature

Subscribed and sworn to before me this _____ day of _____, 20 _____.

Notary Public

My Commission Expires:

BILL NO. 2162ORDINANCE NO. 46-2015

AN ORDINANCE TO AMEND SECTION 610.080 DEFINITIONS AND SECTION 610.090 FEES
PRESCRIBED PERTAINING TO THE FEE FOR A BUSINESS LICENSE
FOR ALL BUSINESSES, TRADES, OCCUPATIONS, PROFESSIONS OR AVOCATIONS
WITHIN THE CITY OF HERCULANEUM AND FIXING THE TIME WHEN THIS ORDINANCE
SHALL BECOME EFFECTIVE

WHEREAS, Section 610.010 provides, in part, that “[a]ll of the various objects, occupations, professions, trades, avocations and businesses within the City of Herculaneum, Missouri specified by this Chapter shall be licensed, taxed and regulated as herein set forth”; and

WHEREAS, Section 610.010 further provides, in part, that “[n]o person shall conduct, pursue, carry on or operate within the City any trade, profession, business, vocation, avocation or occupation specified by this Chapter without paying in advance the license tax prescribed and levied herein”; and

WHEREAS, Section 610.090 of the Herculaneum City Code sets forth a schedule of fees for various businesses; and

WHEREAS, all manner of businesses, trades, occupations, professions or avocations, except for contractors, have been required to pay a Fifteen and 00/100 Dollars (\$15.00) licensing fee under the category, in Section 610.090, and contractors have been required to pay a Fifty and 00/100 (\$50.00) licensing fee under the category, in Section 610.090; and

WHEREAS, the Board of Aldermen of the City of Herculaneum has considered the amount of time allocated by City staff in processing applications for business licenses from businesses, trades, occupations, professions or avocations; and

WHEREAS, the Board of Aldermen of the City of Herculaneum believes that the current Fifty and 00/100 (\$50.00) license fee charged for contractors and Fifteen and 00/100 Dollars (\$15.00) license fee charged to all other such other businesses, trades, occupations, professions or avocations, except home occupations, does not adequately represent the cost to the City for processing and issuing such license to such businesses, trades, occupations, professions or avocations; and

WHEREAS, the Board of Aldermen of the City of Herculaneum desires to establish a fee for licenses for all such businesses, trades, occupations, professions or avocations which will adequately recompense the City for its time and expense associated with processing and issuing such licenses.

NOW, THEREFORE, BE IT ORDAINED AND ESTABLISHED BY THE BOARD OF ALDERMEN OF THE CITY OF HERCULANEUM, MISSOURI, AS FOLLOWS:

SECTION 1. This ordinance shall amend Section 610.080 to read:

SECTION 610.080 DEFINITIONS.

A. The term "merchant" or "person" as used in this Chapter shall hereby be defined as any person, partnership or corporation who shall deal in the retail selling of goods, wares or merchandise at any store, stand or place occupied and maintained for that purpose within the City; provided that this definition shall apply only to those businesses not otherwise defined or

named in this Chapter.

B. For the purposes of this Chapter, the term "general contractor" shall be defined as follows: one who contracts for the completion of an entire project, including purchasing all materials, hiring and paying subcontractors and coordinating all the work.

C. For purposes of this Chapter, the term "home occupation" shall be defined and have the same requirements as stated in Section 410.250 of the Code of Ordinances for the City of Herculaneum, Missouri.

SECTION 610.090 FEES PRESCRIBED.

All persons who are engaged in any of the following businesses, trades, occupations, professions or avocations in the City shall pay to the City an annual tax in an amount specified below:

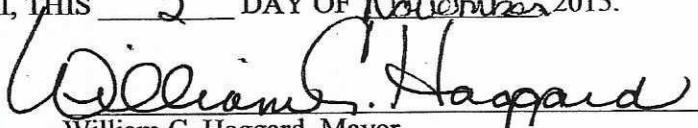
Business, etc.	Amount of annual license tax
Home occupations	\$ 15.00
All other businesses, trades, vocations and avocations whatsoever	\$100.00

SECTION 2. This Ordinance shall be in full force and effect from and after the date of its passage.

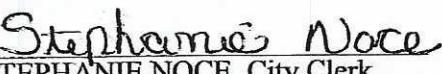
SECTION 3. If any part of this Ordinance is invalid for any reason, such invalidity shall not affect the remainder of this Ordinance.

SECTION 4. This ordinance shall be codified.

READ (IN FULL TWO TIMES) (BY TITLE TWO TIMES, COPIES OF THE PROPOSED ORDINANCE HAVING BEEN MADE AVAILABLE FOR PUBLIC INSPECTION AT THE PLACE OF THE MEETING PRIOR TO THE TIME THE BILL WAS UNDER CONSIDERATION BY THE BOARD OF ALDERMAN) AND PASSED BY THE BOARD OF ALDERMAN OF THE CITY OF HERCULANEUM, MISSOURI, THIS 2 DAY OF November 2015.


William C. Haggard, Mayor
City of Herculaneum

ATTEST:


STEPHANIE NOCE, City Clerk

STATE WAGE RATES

(ALL projects)

Wage rates can be found at the following websites, or by contacting the Missouri Department of Labor:

<http://www.labor.mo.gov/DLS/prevailingwage>

or

http://www.modot.org/business/contractor_resources/bidOpenIndex.htm

This contract requires payment of the prevailing hourly rate of wages for each craft or type of worker required to execute the contract as determined by the Missouri Department of Labor and Industrial Relations. The applicable State Wage Rates for this contract are detailed in the “Annual Wage Order” that is effective 10 calendar days prior to bid opening. These supplemental bidding documents have important legal consequences. It shall be conclusively presumed that they are in the bidder’s possession, and they have been reviewed and used by the bidder in the preparation of any bid submitted on this project.

Missouri

Division of Labor Standards

WAGE AND HOUR SECTION



JEREMIAH W. (JAY) NIXON, Governor

Annual Wage Order No. 22

Section 050 JEFFERSON COUNTY

In accordance with Section 290.262 RSMo 2000, within thirty (30) days after a certified copy of this Annual Wage Order has been filed with the Secretary of State as indicated below, any person who may be affected by this Annual Wage Order may object by filing an objection in triplicate with the Labor and Industrial Relations Commission, P.O. Box 599, Jefferson City, MO 65102-0599. Such objections must set forth in writing the specific grounds of objection. Each objection shall certify that a copy has been furnished to the Division of Labor Standards, P.O. Box 449, Jefferson City, MO 65102-0449 pursuant to 8 CSR 20-5.010(1). A certified copy of the Annual Wage Order has been filed with the Secretary of State of Missouri.

Original Signed by

John E. Lindsey, Director
Division of Labor Standards

This Is A True And Accurate Copy Which Was Filed With The Secretary of State: March 10, 2015

Last Date Objections May Be Filed: April 9, 2015

Prepared by Missouri Department of Labor and Industrial Relations

Building Construction Rates for
JEFFERSON County

REPLACEMENT PAGE

Section 050

OCCUPATIONAL TITLE	** Date of Increase	*	Basic Hourly Rates	Over-Time Schedule	Holiday Schedule	Total Fringe Benefits
Asbestos Worker (H & F) Insulator	1/16		\$38.36	55	60	\$21.41
Boilermaker	9/15		\$32.76	126	7	\$30.10
Bricklayer and Stone Mason	11/15		\$32.50	72	5	\$20.69
Carpenter	6/15	e	\$36.34	77	41	\$15.75
Cement Mason	6/15		\$30.56	80	6	\$17.30
Communication Technician	12/15		\$31.35	44	47	\$9.53 + 31.75%
Electrician (Inside Wireman)	8/15		\$34.20	82	71	\$10.78 + 39.5%
Electrician (Outside-Line Construction\Lineman)	9/15		\$42.52	43	45	\$5.00 + 36.5%
Lineman Operator	9/15		\$36.70	43	45	\$5.00 + 36.5%
Groundman	9/15		\$28.38	43	45	\$5.00 + 36.5%
Elevator Constructor	8/15	a	\$45.09	26	54	\$30.005
Glazier	6/15		\$33.13	87	31	\$19.58 + 10.53%
Ironworker	8/15		\$32.88	11	8	\$23.825
Laborer (Building):						
General		b	\$25.46	73	7	\$12.07
First Semi-Skilled		d	\$26.58	73	7	\$12.07
Second Semi-Skilled		c	\$25.96	73	7	\$12.07
Lather			USE CARPENTER RATE			
Linoleum Layer and Cutter	6/15		\$31.08	92	26	\$15.45
Marble Mason	10/15		\$31.43	76	51	\$14.17
Marble Finisher	10/15		\$26.18	76	51	\$13.47
Millwright	6/15		\$36.34	77	41	\$15.75
Operating Engineer						
Group I	6/15		\$32.16	3	66	\$24.16
Group II	6/15		\$32.16	3	66	\$24.16
Group III	6/15		\$30.26	3	66	\$24.16
Group III-A	6/15		\$32.16	3	66	\$24.16
Group IV	6/15		\$26.80	3	66	\$24.16
Group V	6/15		\$26.80	3	66	\$24.16
Painter	10/15		\$31.65	104	12	\$13.76
Pile Driver			USE CARPENTER RATE			
Pipe Fitter	7/15		\$37.00	91	69	\$26.68
Plasterer	7/15		\$31.06	67	3	\$17.53
Plumber	7/15		\$37.00	91	69	\$26.68
Roofer \ Waterproofer			\$30.70	15	73	\$16.67
Sheet Metal Worker	10/15		\$39.63	32	25	\$21.72
Sprinkler Fitter - Fire Protection	10/15		\$41.96	66	18	\$21.62
Terrazzo Worker	6/15		\$32.11	116	5	\$13.37
Terrazzo Finisher	10/15		\$30.35	116	5	\$11.84
Tile Setter	10/15		\$31.43	76	51	\$14.17
Tile Finisher	10/15		\$26.18	76	51	\$13.47
Traffic Control Service Driver			\$28.775	22	55	\$9.045
Truck Driver-Teamster			\$30.41	35	36	\$10.82

Fringe Benefit Percentage is of the Basic Hourly Rate

**Annual Incremental Increase

Building Construction Rates for JEFFERSON County Footnotes

REPLACEMENT PAGE

Section 050

* Welders receive rate prescribed for the occupational title performing operation to which welding is incidental.

Use Building Construction Rates on Building construction in accordance with the classifications of construction work established in 8 CSR 30-3.040(2).

Use Heavy Construction Rates on Highway and Heavy construction in accordance with the classifications of construction work established in 8 CSR 30-3.040(3).

a - Vacation: Employees over 5 years - 8%; Employees under 5 years - 6%

b - Projects over \$1 Million - \$25.46; Projects under \$1 Million - \$23.31

c - Projects over \$1 Million - \$25.96.; Projects under \$1 Million - \$23.81

d - Projects over \$1 Million - \$26.58; Projects under \$1 Million - \$24.83

** e - Projects over \$1 Million - \$36.34; Projects under \$1 Million - \$31.25

REPLACEMENT PAGE
JEFFERSON COUNTY
BUILDING CONSTRUCTION OVERTIME SCHEDULE

FED: Minimum requirement per Fair Labor Standards Act means time and one-half (1 1/2) shall be paid for all work in excess of forty (40) hours per work week.

NO. 3: Means the regular workday shall consist of eight (8) consecutive hours, exclusive of a thirty (30) minute lunch period, with pay at the straight time rate. The regular workday shall begin between the hours of 6:00 a.m. and 9:00 a.m. The Employer may have the option to schedule the work week from Monday through Thursday at ten (10) hours per day at the straight time rate of pay with all hours in excess of ten (10) hours in any one day to be paid at the applicable overtime rate. If the Employer elects to work from Monday through Thursday and is stopped due to inclement weather, holiday or other conditions beyond the control of the Employer, they shall have the option to work Friday at the straight time rate of pay to complete the forty (40) hours for the workweek. All overtime work performed on Monday through Saturday shall be paid at time and one-half (1 1/2) the hourly rate plus an amount equal to one-half (1/2) of the hourly Total Indicated Fringe Benefits. All work performed on Sundays and recognized holidays shall be paid at double (2) the hourly rate plus an amount equal to the hourly Total Indicated Fringe Benefits. Shifts may be established when considered necessary by the Employer. Shift hours and rates will be as follows. If shifts are established, work on the First Shift will begin between 6:00 a.m. and 9:00 a.m. and consist of eight (8) hours of work plus one-half hour unpaid lunch. Hours worked during the first shift will be paid at the straight time rate of pay. The second shift shall start eight hours after the start of the first shift and consist of eight (8) hours of work plus one-half hour unpaid lunch. Work on the second shift will begin between 2:00 p.m. and 5:00 p.m. and be paid the straight time rate plus \$2.50 per hour. The third shift shall start eight hours after the start of the second shift and consist of eight (8) hours plus one-half hour unpaid lunch. Work on the third shift will begin between 10:00 p.m. and 1:00 a.m. and be paid the straight time rate plus \$3.50 per hour. The additional amounts that are to be paid are only applicable when working shifts. Shifts that begin on Saturday morning through those shifts which end on Sunday morning will be paid at time and one-half these rates. Shifts that begin on Sunday morning through those shifts which end on Monday morning will be paid at double time these rates.

NO. 11: Means eight (8) hours shall constitute a day's work, with the starting time to be established between 6:00 a.m. and 8:00 a.m. from Monday to Friday. Time and one-half (1 1/2) shall be paid for first two (2) hours of overtime Monday through Friday and the first eight (8) hours on Saturday. All other overtime hours Monday through Saturday shall be paid at double (2) time rate. Double (2) time shall be paid for all time on Sunday and recognized holidays or the days observed in lieu of these holidays.

NO. 15: Means the regular working day shall be scheduled to consist of at least eight (8) hours, but no more than ten (10) consecutive hours, exclusive of the lunch period. The regular working day may be scheduled to commence at any time between the hours of 5:00 a.m. and 10:00 a.m. All work performed in excess of forty (40) hours in one work week, or in excess of ten (10) hours in one work day shall be paid at the rate of one and one-half (1 1/2) times the regular hourly wage scale. Any work performed on a Saturday shall be paid for at the rate of one and one-half (1 1/2) times the regular hourly wage scale unless such Saturday work falls under the category of Saturday Make-Up Day. Any work performed by Employees anywhere on Sunday or recognized holidays, shall be paid for at the rate of double (2) time the regular wage scale. If, during the course of a work week, an Employee is unable to work for any reason, and, as a result, that Employee has not accumulated forty (40) hours of compensable time at the straight time rate, the Employer, at his option may offer the Employee the opportunity to work on Saturday at straight time; provided, however, if during the period worked by said Employee on Saturday, the Employee's compensable time at the straight time rate exceeds forty (40) hours, all time worked in excess of the forty (40) hours will be paid at the rate of one and one-half (1 1/2) times the regular hourly wage scale.

NO. 22: Means a regular work week of forty (40) hours will start on Monday and end on Friday. The regular work day shall be either eight (8) or ten (10) hours. If a crew is prevented from working forty (40) hours Monday through Friday, or any part thereof by reason of inclement weather, Saturday or any part thereof may be worked as a make-up day at the straight time rate. Employees who are part of a regular crew on a make-up day, notwithstanding the fact that they may not have been employed the entire week, shall work Saturday at the straight time rate. A workday is to begin between 6:00 a.m. and 9:00 a.m. However, the project starting time may be advanced or delayed if mutually agreed to by the interest parties. For all time worked on recognized holidays, or days observed as such, double (2) time shall be paid.

REPLACEMENT PAGE
JEFFERSON COUNTY
BUILDING CONSTRUCTION OVERTIME SCHEDULE

NO. 26: Means that the regular working day shall consist of eight (8) hours worked between 6:00 a.m., and 5:00 p.m., five (5) days per week, Monday to Friday, inclusive. Hours of work at each jobsite shall be those established by the general contractor and worked by the majority of trades. (The above working hours may be changed by mutual agreement). Work performed on Construction Work on Saturdays, Sundays and before and after the regular working day on Monday to Friday, inclusive, shall be classified as overtime, and paid for at double (2) the rate of single time. The employer may establish hours worked on a jobsite for a four (4) ten (10) hour day work week at straight time pay for construction work; the regular working day shall consist of ten (10) hours worked consecutively, between 6:00 a.m. and 6:00 p.m., four (4) days per week, Monday to Thursday, inclusive. Any work performed on Friday, Saturday, Sunday and holidays, and before and after the regular working day on Monday to Thursday where a four (4) ten (10) hour day workweek has been established, will be paid at two times (2) the single time rate of pay. The rate of pay for all work performed on holidays shall be at two times (2) the single time rate of pay.

NO. 32: The regular working day shall consist of eight (8) hours of labor on the job between six (6) a.m. and four (4) p.m. and the regular working week shall consist of five (5) consecutive eight (8) hour day's of labor on the job beginning with Monday and ending with Friday of each week. The normal work week is 40 hours. All full-time or part-time labor performed during such hours shall be recognized as regular working hours and paid for at the regular hourly rate. All work performed during regular work hours on Saturdays will be paid at time and one-half (1 1/2). All work performed outside of regular working hours and performed during the regular work week, shall be at double (2) times the regular rate, except that the first two (2) hours following the regular work day shall be paid at one and one-half (1 1/2) times the regular rate. An early starting time of 6:00 a.m. may be used mutually agreed upon by the interested parties. SHIFT RATE: Shift work would start after 4:00 p.m. to 6:00 a.m. The first 8 hours would be at 115% of the basic wage rate. Overtime Monday through Friday would be at 1 1/2 of base shift rate. Saturday regular work day hours – 1 1/2 of base shift rate. Saturday – work after 8 hours – 2 times the basic wage rate. Sunday and Holidays – 2 times the basic wage rate. All work performed on recognized holidays and Sundays shall be paid double (2) time. Appropriate overtime rates to be based on fifteen minute increments.

NO. 35: Means a regular work week of forty (40) hours, will start on Monday and end on Friday. The regular work day shall be either eight (8) or ten (10) hours. If a crew is prevented from working forty (40) hours Monday through Friday, or any part thereof by reason of inclement weather, Saturday or any part thereof maybe worked as a make-up day at the straight time rate. Employees who are part of a regular crew on a make-up day, notwithstanding the fact that they may not have been employed the entire week, shall work Saturday at the straight time rate. A work day is to begin between 6:00 a.m. and 9:00 a.m. However, the project starting time maybe advanced or delayed if mutually agreed to by the interested parties. For all time worked on recognized holidays, or days observed as such, double (2) time shall be paid.

NO. 43: Eight (8) hours shall constitute a work day between the hours of 7:00 a.m. and 4:30 p.m. Forty (40) hours within five (5) days, Monday through Friday inclusive, shall constitute the work week. Work performed in the 9th and 10th hour, Monday through Friday, shall be paid at time and one-half (1 1/2) the regular straight time rate of pay. Contractor has the option to pay two (2) hours per day at the time and one-half (1 1/2) the regular straight time rate of pay between the hours of 6:00 a.m. and 5:30 p.m., Monday through Friday. Work performed outside the regularly scheduled working hours and on Saturdays, Sundays and recognized legal holidays, or days celebrated as such, shall be paid for at the rate of double (2) time.

NO. 44: Means forty (40) hours shall constitute a work week, Monday through Friday. Eight (8) hours shall constitute a work day. Hours of work shall be between the hours of 7:00 a.m. and 4:30 p.m. All work performed before 7:00 a.m. and after 4:30 p.m. and all work performed in excess of eight (8) hours in any one work day, over forty (40) hours in any work week and the first eight (8) hours of work on Saturday, shall be paid at the rate of one and one-half (1 1/2) times the regular rate of pay. All hours worked in excess of eight (8) hours on Saturday, all hours worked on Sunday and on holidays, or days that may be celebrated as such, and as designated by the federal government, shall be paid at two (2) times the regular rate of pay. All shifts for work performed between the hours of 4:30 p.m. and 1:00 a.m. shall receive eight (8) hours pay at the regular hourly rate of pay plus two dollars (\$2.00) per clock hour. All work performed between the hours of 12:30 a.m. and 9:00 a.m. on a third shift shall receive eight (8) hours pay at the regular hourly rate plus four dollars (\$4.00) per clock hour. All overtime work required after the completion of a regular shift shall be paid at one and one-half times (1 1/2 x) the "shift" hourly rate.

REPLACEMENT PAGE
JEFFERSON COUNTY
BUILDING CONSTRUCTION OVERTIME SCHEDULE

NO. 55: Means the regular work day shall be eight (8) hours between 6:00 a.m. and 4:30 p.m. The first two (2) hours of work performed in excess of the eight (8) hour work day, Monday through Friday, and the first ten (10) hours of work on Saturday, shall be paid at one & one-half (1½) times the straight time rate. All work performed on Sunday, observed holidays and in excess of ten (10) hours a day, Monday through Saturday, shall be paid at double (2) the straight time rate.

NO. 66: Means eight (8) hours shall constitute a day's work beginning at 7:00 a.m. (or 8:00) A.M. and ending at 3:30 (or 4:30) P.M. The work week shall be forty (40) hours beginning Monday at 7:00 a.m. (or 8:00) A.M. and ending Friday at 3:30 (or 4:30) P.M. The Employer at his option may use a flexible starting time between the hours of 6:00 a.m. and 8:00 a.m. All overtime, that is worked outside of the above established working hours of Monday through Friday, shall be paid at double (2) time, including Saturdays, Sundays and Holidays.

NO. 67: Means eight (8) hours shall constitute a day's work, with a flexible starting time to begin between 6:00 a.m. to 8:00 a.m., five (5) days a week, Monday through Friday. Any work over eight (8) hours in any one day shall be at the overtime rate, which is time & one-half (1½). Any work on Saturday shall be at time & one-half (1½), unless a Make-Up Day due to inclement weather is in effect. Any work on Sundays or holidays shall be at double (2) time. Four (4) days, ten (10) hours each day to be worked during Monday through Friday, shall be paid at straight time. A Make-Up Day Due To Inclement Weather Only - Employee(s) will be permitted to work an eight (8) hour make-up day on Saturday only, and the employee will receive the regular straight time wage rate.

NO. 72: Means that except as is otherwise provided herein, the work week shall be determined to begin at 8:00 a.m. Wednesday and end at 4:30 p.m. on the following Tuesday. Except as herein provided, working hours are from 8:00 a.m. to 11:55 a.m. and 12:30 p.m. to 4:25 p.m. and no more than the regular hours shall be worked during the forenoon or afternoon at the regular rate. In the case of days of inclement weather starting time and quitting time may be adjusted so long as the hours worked on such days do not exceed eight (8) and do not extend beyond 4:30 p.m. In circumstances where the Employee or Employees have regularly been working overtime on a particular day or days, no adjustment in the starting time shall operate to deprive Employees of overtime pay, which they would have otherwise received but for the change in the starting time. The parties understand that the application of the provisions of the preceding sentence will result in Employees receiving overtime pay even where they have not worked more than with (8) hours on a particular day. Regardless of the starting time, the forenoon working hours shall end at 11:55 a.m. and the afternoon working hours shall begin at 12:30 p.m. and end 8 hours and 25 minutes after the starting time fixed by the Employer for forenoon hours. Work performed by an employee on a non-holiday Saturday, except as hereinafter provided, or at night or before or after regular working hours on a non-holiday weekday, shall be considered overtime work, for which Employees working during such time shall be paid at the rate of one and one-half (1½) times their regular hourly wage rate for each hour or fraction thereof, worked during such time. Work performed on a Sunday or the recognized holidays shall be considered overtime work for which the Employee shall be paid twice the amount of his or her regular hourly wage rate for each hour or fraction thereof worked on any such day.

**REPLACEMENT PAGE
JEFFERSON COUNTY
BUILDING CONSTRUCTION OVERTIME SCHEDULE**

NO. 73: Means eight (8) hours shall constitute a day's work to begin at 8:00 a.m. and end at 4:30 p.m. The starting time may be advanced one (1) or two (2) hours. Employees shall receive time and one-half (1½) for all time they are required to work before 8:00 a.m., during the lunch period or after 4:30 p.m. unless the starting time is advanced as provided above. Forty (40) hours shall constitute a week's work, Monday through Friday, or any part thereof by reason of inclement weather (rain or mud), Saturday or any part thereof may be worked as a make-up day at the straight time rate. The Employer shall have the option of working five (5) eight (8) hour day's or four (4) ten (10) hour day's Monday through Friday. If an Employer elects to work five (5) eight (8) hour days during any work week, hours worked more than eight (8) per day or forty (40) per week shall be paid at time and one-half (1½) the hourly rate Monday through Friday. If an employer elects to work four (4) ten (10) hour days in any week, work performed more than ten (10) hours per day or forty (40) hours per week shall be paid at time and one-half (1½) the hourly rate Monday through Friday. If an Employer is working ten (10) hour days and loses a day due to inclement weather, he may work ten (10) hours Friday at straight time. All time over the regular workday as defined and all hours worked on Saturday shall be paid at the rate of one and one-half (1½) the regular rate of wages. If workmen are required to work recognized holidays or days observed as such, or on Sunday, they shall receive double (2) the regular rate of pay for such work. If a laborer is assisting another craft on a make-up day and the other craft is receiving overtime pay the laborer shall receive the same overtime multiple as the craft assisted. No overtime rates shall be broken down into less than thirty (30) minute units of time. Projects that cannot be performed during regular workday: Building construction work, if required by the owner, the contractor may perform work outside the normal hours and employees shall be paid applicable straight time hourly wage rate plus a premium of \$1.50 per hour for the first eight hours worked. Any hours worked in excess of eight hours shall be paid at the applicable overtime rate plus \$1.50 per hour premium. Shift work: The Employer may elect to work, one, two or three shifts on any work. When two or more shifts are worked on any operation, the first shift or day shift shall consist of eight (8) hours exclusive of lunch time; the second or swing shift consist of eight (8) hours' work for eight and one-half hours pay, exclusive of lunch time; the third or graveyard shift shall consist of eight (8) hours' work for nine (9) hours' pay exclusive of lunch time. The swing shift shall be paid twenty-five cents (\$.25) per hour above the regular rate of pay. The graveyard shift shall be paid fifty cents (\$.50) per hour above the regular rate of pay. Multiple shift (second or third shift) operation will not be construed on the entire project if at any time it is deemed advisable and necessary for the employer to a specific operation. However, no shift shall be started between midnight and 6:00 a.m. except the graveyard shift on a three (3) shift operation, or except in unusual or emergency, regardless if the project is working one (1) or two (2) shift. Shifts shall be established for a minimum of three (3) consecutive workdays. When 2-10 or 12 hour shifts are worked, the second shift shall receive \$.50 per hour above regular rate of pay. When the employer elects to work 2-10 or 12 hour shifts, the first 8 hours shall be at straight time rates. The remaining 2 or 4 hours shall be at the overtime rate of time and one-half.

NO. 76: Means the standard workday shall consist of eight (8) hours of work between the hours of 8:00 a.m. and 4:30 p.m. with a thirty (30) minute unpaid lunch hour occurring in the middle of the shift. The standard workweek shall consist of five standard workdays commencing on Monday and ending on Friday. The normal starting and quitting times may be changed by mutual consent of interested parties. All time worked before and after the established eight (8) hour workday, Monday through Friday, and all time worked on Saturday, shall be paid for at the rate of time & one-half (1½) the hourly base wage rate in effect. All time worked on Sunday and holidays shall be paid at the rate of double (2) the hourly wage in effect. All work done on Saturday will be done at time & one-half (1½), unless Saturday shall be used as a make-up day. If an employee should lose one or more days in a work week and use Saturday as a make-up day the pay shall be at the regular hourly base wage rate and benefits.

NO. 77: Means the regular workday shall consist of eight (8) consecutive hours, exclusive of a thirty (30) minute lunch period, with pay at the regular straight time hourly rate. The regular workday shall begin on the job site between the hours of 6:00 a.m. and 8:00 a.m. with the starting time to be determined by the Employer, unless project owner requires different starting time. This adjustable starting time can, at the Employer's option, be staggered to permit starting portions of the work force at various times within the prescribed hours. The Employer may establish a four (4) ten (10) hour shift exclusive of the thirty (30) minute lunch period at the straight time wage rate. Forty (40) hours per week shall constitute a week's work Monday through Thursday. In the event a job is down due to weather conditions, safety or other conditions beyond the control of the Employer, then Friday may, at the option of the employer, be worked as a make-up day at the straight time wage rate. Straight time is not to exceed ten (10) hours a day or forty (40) hours per week. Time and one-half (1 ½) shall be paid for all overtime hours worked during the week, Monday through Friday and for all work performed on Saturday. Double (2) time shall be paid for all time worked on Sunday and recognized holidays.

**REPLACEMENT PAGE
JEFFERSON COUNTY
BUILDING CONSTRUCTION OVERTIME SCHEDULE**

NO. 80: Means eight (8) hours shall constitute the regular work day and forty (40) hours a work week, Monday through Friday. The Employer shall establish the starting time between 6:30 a.m. through 9:00 a.m. An Employer may further adjust the starting time up to 9:30 a.m. throughout the year. Time and one-half (1½) shall be paid after eight (8) consecutive hours worked after the established starting time and for hours worked before the established starting time. Time and one-half (1½) shall be paid for work performed on Saturdays. Work performed on Sundays and Holidays shall be paid at the double (2) time rate of pay. The Employer when working on Highway and Road Work may have the option to schedule the work week for his paving crew only from Monday through Thursday at ten (10) hours per day at the straight time rate of pay with all hours in excess of ten (10) hours in any one day to be at the applicable overtime rate of time and one-half (1½). If the Employer elects to work from Monday through Thursday and is stopped due to inclement weather (rain, snow, sleet falling), the Employer shall have the option to work Friday at the straight time rate of pay to complete the forty (40) hours.

NO. 82: Means the work day shall consist of eight (8) hours worked between 7:00 a.m. and 4:30 p.m. Forty (40) hours will constitute the work week from Monday through Friday, inclusive. Up to four (4) hours of overtime work per day performed before or after the assigned normal work day, (twelve (12) continuous hours, starting no earlier than 6:00 a.m., Monday through Friday), shall be paid at a rate of one and one-half times (1.5x) that employee's hourly rate. Any additional overtime, Monday through Friday, shall be paid at two times (2x) the regular rate of pay. The first eight hours of overtime work on Saturday shall be paid at the rate of one and one-half times (1.5x) the regular rate of pay. Hours worked in excess of eight (8) hours on Saturday shall be paid at two times (2x) the regular rate of pay. Double time shall be paid for work performed on Sundays, recognized legal holidays or days that may be celebrated as such as designated by the federal government. All shifts for work performed between the hours of 4:30 p.m. and 1:00 a.m. shall be paid at the regular hourly rate plus two dollars (\$2.00) per clock hour. All shifts for work performed between the hours of 12:30 a.m. and 9:00 a.m. shall be paid at the regular hour rate plus four dollars (\$4.00) per clock hour. All overtime work required after the completion of a regular shift shall be paid at one and one-half times (1.5x) the "shift" hourly rate.

NO. 87: Means eight (8) hours starting between 6:00 a.m. and 8:00 a.m. and ending between 2:30 p.m. and 4:30 p.m. at the Employers discretion shall constitute a day's work. Any work prior to 6:00 a.m. or after eight (8) hours shall be paid at the overtime rate. Five (5) days from Monday through Friday inclusive shall constitute a regular work week. All hours before and after these regular hours shall be considered overtime and shall be paid for at the rate of double (2) time. All work on Saturday and Sunday shall be paid at double (2) the prevailing scale of wages.

NO. 91: Means eight (8) hours shall constitute a day's work commencing at 7:00 a.m. and ending at 3:30 p.m., allowing one-half (½) hour for lunch. The option exists for the Employer to use a flexible starting time between the hours of 6:00 a.m. and 9:00 a.m. The regular workweek shall consist of forty (40) hours of five (5) workdays, Monday through Friday. The workweek may consist of four (4) ten (10) hour days from Monday through Thursday, with Friday as a make-up day. If the make-up day is a holiday, the employee shall be paid at the double (2) time rate. The employees shall be paid time and one-half (1½) for work performed on Saturdays, before the regular starting time or after the regular quitting time or over eight (8) hours per work day (unless working a 10-hour work day, then time and one-half (1½) is paid for work performed over ten (10) hours a day) or over forty (40) hours per work week. Work performed on Sundays and recognized holidays shall be paid at the double (2) time rate of pay. SHIFT WORK: When it is necessary for the project to operate in shifts, there will be three (3) eight (8) hour shifts commencing at 8:00 a.m. Shift work must continue for a period of not less than three (3) consecutive work days, two (2) days which must be regular work days (Monday through Friday). In the event the second or third shift of any regular work day shall fall into a Saturday or a holiday, such extension into a Saturday or holiday shall be considered as part of the previous workday and employees shall be paid at the regular shift rate. The first day shift shall work a regular eight (8) hour day at regular rates. The second shift shall be eight (8) hours regular time pay plus \$2.50 per hour premium for eight (8) hours work. Third shift will be for eight (8) hours regular time pay plus \$3.00 per hour premium for eight (8) hours work.

NO. 92: Means all work performed from 8:00 a.m. to 4:30 p.m., Monday through Friday, will be at straight time pay up to forty (40) hours per week. All work performed Monday through Friday before 8:00 a.m. and after 4:30 p.m. will be done at time and one-half (1½). All work done on Saturday will be done at time and one-half (1½), unless the employer and employee agree that Saturday shall be used as a make-up day. The Employer may use a flexible starting time of 7:00 a.m. to 8:00 a.m., and quitting time of 3:30 p.m. to 4:30 p.m., and any such different work starting time shall determine whether wages are payable at the straight rate or the premium rate. All work performed on Saturday shall be paid for at time and one-half (1½), unless the Saturday has been used as a make-up day. All work performed on Sunday and holidays shall be paid for at the rate of double (2) time.

**REPLACEMENT PAGE
JEFFERSON COUNTY
BUILDING CONSTRUCTION OVERTIME SCHEDULE**

NO. 104: Means eight (8) hours per day shall constitute a standard work day between the hours of 6:00 a.m. and 8:00 p.m. The standard work week shall be forty (40) hours between 6:00 a.m. on Monday and ending 8:00 p.m. on Friday. An overtime rate of time and one-half (1½) the base hourly rate shall be paid on all hours in excess of eight (8) hours in a day Monday through Friday. Saturdays shall be considered overtime and work done on Saturday shall be paid at time and one-half (1½) the prevailing scale. Sundays and holidays shall be considered overtime and work done on these days shall be paid at double (2) the prevailing scale.

NO. 116: Means the standard work day shall consist of eight (8) hours of work between the hours of 8:00 a.m. and 4:30 p.m. The standard work week shall consist of five standard work days commencing on Monday and ending on Friday inclusive. All time worked before and after the established eight (8) hour work day, Monday through Friday, and all time worked on Saturdays, shall be paid for at the rate of time & one-half (1½) the hourly base wage rate in effect. All time worked on Sundays and recognized holidays shall be paid for at the rate of double (2) the hourly base wage rate in effect.

NO. 126: Means eight (8) hours per day shall constitute a day's work and forty (40) hours per week, Monday through Friday, shall constitute a week's work. The regular starting time shall be 8:00 a.m. If a second or third shift is used, the regular starting time of the second shift shall be 4:30 p.m. and the regular starting period for the third shift shall be 12:30 a.m. These times may be adjusted by the employer. The day shift shall work a regular eight (8) hours shift as outlined above. Employees working a second shift shall receive an additional \$0.25 above the regular hourly rate and perform seven and one-half (7½) hours work for eight (8) hours pay. Third shift employees shall be paid an additional \$0.50 above the regular hourly rate and work seven (7) hours for eight (8) hours pay. When circumstances warrant, the Employer may change the regular workweek to four (4) ten-hour days at the regular time rate of pay. All time worked before and after the established workday of eight (8) hours, Monday through Friday, and all time worked on Saturday shall be paid at the rate of time and one-half (1½) except in cases where work is part of an employee's regular Friday shift. All time worked on Sunday and recognized holidays shall be paid at the double (2) time rate of pay except in cases where work is part of an employee's previous day's shift. For all overtime hours worked \$28.81 of the fringe benefits portion of the prevailing wage shall be paid at the same overtime rate at which the cash portion of the prevailing wage is to be paid. The remaining \$1.29 of the fringe benefit portion of the prevailing wage may be paid at straight time.

JEFFERSON COUNTY HOLIDAY SCHEDULE – BUILDING CONSTRUCTION

NO. 3: All work done on New Year's Day, Decoration Day, July 4th, Labor Day, Veteran's Day, Thanksgiving and Christmas shall be compensated at the double (2) time rate of pay. When any of these holidays fall on a Sunday, the following Monday shall be observed.

NO. 5: All work that shall be done on New Year's Day, Memorial Day, Fourth of July, Labor Day, Veteran's Day, Thanksgiving Day, and Christmas Day shall be paid at the double (2) time rate of pay.

NO. 6: The following days are recognized as holidays: New Year's Day, Memorial Day, Fourth of July, Labor Day, Veterans Day, Thanksgiving Day, Christmas Day and any additional holidays which may be mutually agreed upon. Whenever any such holiday falls on a Sunday, the following Monday shall be recognized and observed as the holiday. Work performed on Sundays and holidays shall be paid at the double time rate of pay. No work shall be performed on Labor Day.

NO. 7: The following days are assigned days and are recognized as holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day, and Christmas Day. If a holiday falls on a Sunday, it shall be observed on the following Monday. If a holiday falls on a Saturday, it shall be observed on the preceding Friday. No work shall be performed on Labor Day except in case of jeopardy to work under construction. This is applied to protect Labor Day. When a holiday falls during the normal workweek, Monday through Friday, it shall be counted as eight (8) hours toward the forty (40) hour week. However, no reimbursement for these eight (8) hours is to be paid to the workman unless worked. If workman are required to work the above enumerated holidays or days observed as such, or on Sunday, they shall receive double (2) the regular rate of pay for such work.

NO. 8: All work performed on New Year's Day, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day, and Christmas Day, or the days observed in lieu of these holidays, shall be paid at the double time rate of pay.

NO. 12: All work done on New Year's Day, Decoration Day, Independence Day, Veteran's Day, Thanksgiving Day and Christmas Day shall be paid at the double time rate of pay. Should any of these days fall on Sunday, then the following day shall be observed as the holiday. Under no circumstances shall employees be permitted to work on Labor Day.

NO. 18: All work done on New Year's Day, Memorial Day, July 4th, Labor Day, Veteran's Day, Thanksgiving Day, the Friday following Thanksgiving and Christmas Day shall be paid at the double time rate of pay. When one of the above holidays falls on Sunday, the following Monday shall be considered the holiday, and when one of the above holidays falls on Saturday, the preceding Friday shall be considered the holiday, and all work performed on said day(s) shall be paid at the double time rate.

NO. 25: All work done on New Year's Day, Martin Luther King Day, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day, the day after Thanksgiving, Christmas Day, Presidential Election Day, or days locally observed as such, and Saturday and Sunday shall be recognized as holidays and shall be paid at the double (2) time rate of pay. If a named holiday falls on a Saturday, the holiday will be observed on the preceding Friday. When a named holiday falls on Sunday, the Monday after will be observed as the holiday. Appropriate overtime rates to be based on fifteen minute increments.

NO. 26: All work done on New Year's Day, Memorial Day, Fourth of July, Labor Day, Veteran's Day, Thanksgiving Day and Christmas Day shall be paid at the double time rate of pay. When a Holiday occurs on Saturday it shall not be observed on either the previous Friday or the following Monday. Such days shall be regular work days. If such a holiday occurs on Sunday it shall be observed on the following Monday.

NO. 31: All work done on New Year's Day, Presidents Day, Good Friday, Memorial Day, Fourth of July, Labor Day, Veteran's Day, Thanksgiving Day, Friday after Thanksgiving Day, Christmas Day, and Employee's Birthday shall be paid at the double time rate of pay. If a holiday falls on Sunday, the following Monday will be observed as the recognized holiday. If a holiday falls on Saturday, the preceding Friday will be observed as the recognized holiday.

JEFFERSON COUNTY HOLIDAY SCHEDULE – BUILDING CONSTRUCTION

NO. 36: The following days are recognized as holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day. If a holiday falls on a Sunday, it shall be observed on the following Monday. No work shall be performed on Labor Day except in case of jeopardy to work under construction. This rule is applied to protect Labor Day. When a holiday falls during the normal work week, Monday through Friday, it shall be counted as eight (8) hours toward the forty (40) hour week; however, no reimbursement for this eight (8) hours is to be paid the workman unless worked. An Employer working a four (4) day, ten (10) hour schedule may use Friday as a make-up day when an observed holiday occurs during the work week. Employees have the option to work that make-up day. If workmen are required to work the above enumerated holidays, or days observed as such, they shall receive double (2) the regular rate of pay for such work.

NO. 41: The following days shall be observed as legal holidays: New Year's Day, Memorial Day, Fourth of July, Labor Day, Veteran's Day, Thanksgiving Day and Christmas Day. No work shall be performed on the Fourth of July, Labor Day or Christmas Day. Any work performed on the above holidays shall be paid for at two (2) times the regular straight time rate of pay. When any of the above holidays fall on Sunday, the following Monday shall be observed as such holiday. If a holiday falls on Saturday, it shall not be considered to be observed on the previous Friday or following Monday. Such days shall be regular workdays.

NO. 45: All work performed on New Year's Day, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day, the day after Thanksgiving, the day before Christmas, and Christmas Day, shall be paid at the double time rate of pay.

NO. 47: The following holidays are recognized: New Year's Day, Memorial Day, Fourth of July, Labor Day, Veteran's Day, Thanksgiving Day, the day after Thanksgiving and Christmas Day. When a holiday listed above falls on Saturday, it shall be celebrated on the Friday preceding the holiday. When a holiday falls on Sunday, the following Monday shall be observed. Holidays referred to above shall be paid for at the double (2) time rate of pay when worked.

NO. 51: All time worked on Sundays and recognized holidays shall be paid for at the rate of double (2) the hourly base wage rate in effect. The Employer agrees to recognize the following holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day and Christmas Day. If the holiday falls on a Sunday, it shall be recognized on the following Monday. If the holiday falls on a Saturday, it shall be recognized as a Saturday only holiday.

NO. 54: All work performed on New Year's Day, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day, the Friday after Thanksgiving Day, and Christmas Day shall be paid at the double (2) time rate of pay. When a holiday falls on Saturday, it shall be observed on Friday. When a holiday falls on Sunday, it shall be observed on Monday.

NO. 55: The following days are recognized as holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day. If a holiday falls on a Sunday, it shall be observed on the following Monday. No work shall be performed on Labor Day except in case of jeopardy to work under construction. This rule is applied to protect Labor Day. When a holiday falls during the normal work week, Monday through Friday, it shall be counted as eight (8) hours toward the forty (40) hour week; however, no reimbursement for this eight (8) hours is to be paid the workmen unless worked. An Employer working a four (4) day, ten (10) hour schedule may use Friday as a make up day when an observed holiday occurs during the work week. Employees have the option to work that make up day. If workmen are required to work the above enumerated holidays, or days observed as such, they shall receive double (2) the regular rate of pay for such work.

NO. 60: All work performed on New Year's Day, Armistice Day (Veteran's Day), Decoration Day (Memorial Day), Independence Day (Fourth of July), Thanksgiving Day and Christmas Day shall be paid at the double time rate of pay. No work shall be performed on Labor Day except when triple (3) time is paid. When a holiday falls on Saturday, Friday will be observed as the holiday. When a holiday falls on Sunday, the following Monday shall be observed as the holiday.

JEFFERSON COUNTY HOLIDAY SCHEDULE – BUILDING CONSTRUCTION

NO. 66: All work performed on Sundays and the following recognized holidays, or the days observed as such, of New Year's Day, Decoration Day, Fourth of July, Labor Day, Veteran's Day, Thanksgiving Day and Christmas Day, shall be paid at double (2) the hourly rate plus an amount equal to the hourly Total Indicated Fringe Benefits. Whenever any such holidays fall on a Sunday, the following Monday shall be observed as a holiday.

NO. 69: All work performed on New Year's Day, Memorial Day, July Fourth, Labor Day, Veteran's Day, Thanksgiving Day or Christmas Day shall be compensated at double (2) their straight-time hourly rate of pay. Friday after Thanksgiving and the day before Christmas are also holidays, however, if the employer chooses to work the normal work hours on these days, the employee will be paid at straight -time rate of pay. If a holiday falls on a Saturday, the holiday will be observed on Saturday; if a holiday falls on a Sunday, the holiday will be observed on the following Monday.

NO. 71: All work performed on the following recognized holidays, or days that may be celebrated as such, shall be paid at the double (2) time rate of pay: New Year's Day, Memorial Day, Independence Day, Labor Day, Veterans Day, Thanksgiving Day, Day after Thanksgiving and Christmas Day. If a holiday falls on Sunday, it shall be celebrated on Monday. If a holiday falls on Saturday, it shall be celebrated on the Friday proceeding such Saturday.

NO. 73: The following days are recognized as holidays: New Year's Day, Memorial Day, Fourth of July, Labor Day, Veteran's Day (or mutually agreed date of the Friday after Thanksgiving Day may be substituted for Veteran's Day), Thanksgiving Day and Christmas Day, or in the event that any of said Holidays falls on Sunday, then the day or days generally recognized as such. Any work performed anywhere on any of the aforesaid Holidays, or on the day or days recognized and observed as such, shall be paid for at double (2) time the regular hourly rate.

Heavy Construction Rates for
JEFFERSON County

REPLACEMENT PAGE

Section 050

OCCUPATIONAL TITLE	* Date of Increase	Basic Hourly Rates	Over-Time Schedule	Holiday Schedule	Total Fringe Benefits
Carpenter	6/15	\$35.68	23	16	\$15.55
Cement Mason	6/15	\$30.56	17	11	\$17.30
Electrician (Outside-Line Construction\Lineman)	9/15	\$42.52	9	12	\$5.00 + 36.5%
Lineman Operator	9/15	\$36.70	9	12	\$5.00 + 36.5%
Lineman - Tree Trimmer	10/15	\$24.99	32	31	\$9.95 + 3%
Groundman	9/15	\$28.38	9	12	\$5.00 + 36.5%
Groundman - Tree Trimmer	10/15	\$19.80	32	31	\$8.10 + 3%
Laborer					
General Laborer	6/15	\$29.11	2	4	\$12.82
Skilled Laborer	6/15	\$29.71	2	4	\$12.82
Millwright	6/15	\$35.68	23	16	\$15.55
Operating Engineer					
Group I	6/15	\$32.16	10	9	\$24.16
Group II	6/15	\$32.16	10	9	\$24.16
Group III	6/15	\$30.86	10	9	\$24.16
Group IV	6/15	\$27.40	10	9	\$24.16
Oiler-Driver	6/15	\$27.86	10	9	\$24.16
Pile Driver	6/15	\$35.68	23	16	\$15.55
Traffic Control Service Driver		\$28.775	26	25	\$9.045
Truck Driver-Teamster		\$30.41	25	21	\$10.82

Use Heavy Construction Rates on Highway and Heavy construction in accordance with the classifications of construction work established in 8 CSR 30-3.040(3).

Use Building Construction Rates on Building construction in accordance with the classifications of construction work established in 8 CSR 30-3.040(2).

If a worker is performing work on a heavy construction project within an occupational title that is not listed on the Heavy Construction Rate Sheet, use the rate for that occupational title as shown on the Building Construction Rate sheet.

**REPLACEMENT PAGE
JEFFERSON COUNTY
OVERTIME SCHEDULE - HEAVY CONSTRUCTION**

FED: Minimum requirement per Fair Labor Standards Act means time and one-half (1 1/2) shall be paid for all work in excess of forty (40) hours per work week.

NO. 2: Means a regular workweek shall be forty (40) hours and will start on Monday and end on Friday. The Employer shall have the option of working five 8-hour days or four 10-hour days Monday through Friday. If an Employer elects to work five 8-hour days during any workweek, hours worked more than eight (8) per day or 40 per week shall be paid at time and one-half the hourly rate Monday through Friday. If an Employer elects to work four 10-hour days in a week, work performed more than ten (10) hours per day or 40 hours per week shall be paid at time and one-half the hourly rate Monday through Friday. When working a five 8-hour day schedule and an Employer is prevented from working forty (40) hours Monday through Friday, or any part thereof, by reason of inclement weather, Saturday or any part thereof may be worked as a make-up day at the straight time rate. If an Employer is working a four 10-hour day schedule and loses a day due to inclement weather, he may work 10 hours Friday at straight time. All hours worked over the 40 hours Monday through Friday will be paid at 1 1/2 overtime rate. A workday shift is to begin at the option of the Employer, between 6:00 a.m. and not later than 9:00 a.m. However, the project starting time may be advanced or delayed if required. If workmen are required to work the enumerated holidays or days observed as such or Sundays, they shall receive double (2) the regular rate of pay for such work. Overtime shall be computed at one-half (1/2) hour intervals. Shift: The Contractor may elect to work one, two or three shifts on any work. When operating on more than one shift, the shifts shall be known as the day shift, swing shift, and graveyard shift as such terms are recognized in the industry. When two shifts are worked on any operation, the shifts will consist of eight (8) or ten (10) hours exclusive of lunchtime. When three shifts are worked the first day or day shift will consist of eight (8) hours exclusive of lunchtime. The second or swing shift shall consist of seven and one-half (7 1/2) hours work for eight hours pay, exclusive of lunchtime, and the third or the graveyard shift shall consist of seven (7) hours work for eight (8) hours pay, exclusive of the lunchtime. All time in excess of normal shifts shall be considered overtime. Multiple shift (the two or three shift) operation will not be construed on the entire project if at anytime it is deemed advisable and necessary for the Employer to multiple shift a specific operation. However, no shift shall be started between midnight and six a.m. except the graveyard shift on a three-shift operation, or except in an unusual or emergency situation. If an Employer starts a shift between midnight and 6 a.m. except the graveyard shift on a three-shift operation, he shall reimburse all employees for the entire shift at the double time rate. Completion of the second shift on a two-shift operation or completion of the graveyard shift on a three-shift operation that carries over into Saturday morning, shall be at the straight time rate. Overtime shall be computed at 1/2 hour intervals.

NO. 9: Eight (8) hours shall constitute a work day between the hours of 7:00 a.m. and 4:30 p.m. Forty (40) hours within five (5) days, Monday through Friday inclusive, shall constitute the work week. Work performed in the 9th and 10th hour, Monday through Friday, shall be paid at time and one-half (1 1/2) the regular straight time rate of pay. Contractor has the option to pay two (2) hours per day at the time and one-half (1 1/2) the regular straight time rate of pay between the hours of 6:00 a.m. and 5:30 p.m., Monday through Friday. Work performed in the first eight (8) hours on Saturday shall be paid at the rate of one and eight tenths (1.8) the regular straight time rate. Work performed outside these hours and on Sundays and recognized legal holidays, or days celebrated as such, shall be paid for at the rate of double (2) time.

REPLACEMENT PAGE
JEFFERSON COUNTY
OVERTIME SCHEDULE - HEAVY CONSTRUCTION

NO. 10: Means the regular workday for which employees shall be compensated at straight time hourly rate of pay shall, unless otherwise provided for, begin at 8:00 a.m. and end at 4:30 p.m. The regular workweek shall consist of five (5) days, Monday through Friday, beginning at 8:00 a.m. and ending at 4:30 p.m. except as may be modified. The starting time may be either advanced or delayed one hour or two hours at the discretion of the Employer. The Employer may have the option to schedule his work week from Monday through Thursday at ten (10) hours per day at the straight time rate of pay with all hours in excess of ten (10) hours in any one day to be at the applicable overtime rate. If the Employer elects to work Monday through Thursday and is stopped due to inclement weather, holidays or other conditions beyond the control of the Employer, he shall have the option to work Friday at the straight time rate of pay to complete the forty (40) hour workweek. All necessary overtime and work performed on Saturday, shall be paid at time and one-half (1½) the hourly rate, plus an amount equal to one-half (½) of the hourly Total Indicated Fringe Benefits. All work performed on Sundays and recognized holidays shall be paid at double (2) the hourly rate, plus an amount equal to the hourly Total Indicated Fringe Benefits. Shifts may be established when considered necessary by the Employer. Shift hours and rates will be as follows. If shifts are established, work on the First Shift will begin between 6:00 a.m. and 9:00 a.m. and consist of eight (8) hours of work plus one-half hour unpaid lunch. Hours worked during the first shift will be paid at the straight time rate of pay. The second shift shall start eight hours after the start of the first shift and consist of eight (8) hours of work plus one-half hour unpaid lunch. Work on the second shift will begin between 2:00 p.m. and 5:00 p.m. and be paid the straight time rate plus \$2.50 per hour. The third shift shall start eight hours after the start of the second shift and consist of eight (8) hours plus one-half hour unpaid lunch. Work on the third shift will begin between 10:00 p.m. and 1:00 a.m. and be paid the straight time rate plus \$3.50 per hour. The additional amounts that are to be paid are only applicable when working shifts. Shifts that begin on Saturday morning through those shifts which end on Sunday morning will be paid at time and one-half these rates. Shifts that begin on Sunday morning through those shifts which end on Monday morning will be paid at double time these rates.

NO. 17: Means eight (8) hours shall constitute the regular work day and forty (40) hours a work week, Monday through Friday. The Employer shall establish the starting time between 6:30 a.m. through 9:00 a.m. An Employer may further adjust the starting time up to 9:30 A.M. throughout the year. Time and one-half (1½) shall be paid after eight (8) consecutive hours worked after the established starting time and for hours worked before the established starting time. Time and one-half (1½) shall be paid for work performed on Saturdays. Work performed on Sundays and Holidays shall be paid at the double (2) time rate of pay. The Employer when working on Highway and Road Work may have the option to schedule the work week for his paving crew only from Monday through Thursday at ten (10) hours per day at the straight time rate of pay with all hours in excess of ten (10) hours in any one day to be at the applicable overtime rate of time and one-half (1½). If the Employer elects to work from Monday through Thursday and is stopped due to inclement weather (rain, snow, sleet falling), the Employer shall have the option to work Friday at the straight time rate of pay to complete the forty (40) hours.

NO. 23: Means the regular workweek shall start on Monday and end on Friday, except where the Employer elects to work Monday through Thursday, (10) hours per day. All work over ten (10) hours in a day or forty (40) hours in a week shall be at the overtime rate of one and one-half (1½) times the regular hourly rate. The regular workday shall be either eight (8) or ten (10) hours. If a job can't work forty (40) hours Monday through Friday because of inclement weather or other conditions beyond the control of the Employer, Friday or Saturday may be worked as a make-up day at straight time (if working 4-10's). Saturday may be worked as a make-up day at straight time (if working 5-8's). An Employer, who is working a four (4) ten (10) hour day work schedule may use Friday as a make-up day when a workday is lost due to a holiday. A workday is to begin at the option of the Employer but not later than 11:00 a.m. except when inclement weather, requirements of the owner or other conditions beyond the reasonable control of the Employer prevent work. Except as worked as a make-up day, time on Saturday shall be worked at one and one-half (1½) times the regular rate. Work performed on Sunday shall be paid at two (2) times the regular rate. Work performed on recognized holidays or days observed as such, shall also be paid at the double (2) time rate of pay. **For all overtime hours worked during the week or on Saturday \$14.55 of the fringe benefits portion of the prevailing wage shall be paid at time and one-half (1½). For all overtime hours worked on Sundays or recognized holidays \$14.55 of the fringe benefits portion of the prevailing wage shall be paid double time. The remaining \$.50 of the fringe benefit portion of the prevailing wage shall be paid at straight time.**

**REPLACEMENT PAGE
JEFFERSON COUNTY
OVERTIME SCHEDULE - HEAVY CONSTRUCTION**

NO. 25: Means a regular work week of forty (40) hours, starting on Monday and ending on Friday. The regular work day shall be either eight (8) or ten (10) hours. If a crew is prevented from working forty (40) hours Monday through Friday, or any part thereof by reason of inclement weather, Saturday or any part thereof maybe worked as a make-up day at the straight time rate. Employees who are part of a regular crew on a make-up day, notwithstanding the fact that they may not have been employed the entire week, shall work Saturday at the straight time rate. A work day is to begin between 6:00 a.m. and 9:00 a.m. However, the project starting time maybe advanced or delayed if mutually agreed to by the interest parties. All hours worked on recognized holidays, or days observed as such, double (2) time shall be paid.

NO. 26: Means a regular work week of forty (40) hours will start on Monday and end on Friday. The regular work day shall be either eight (8) or ten (10) hours. If a crew is prevented from working forty (40) hours Monday through Friday, or any part thereof by reason of inclement weather, Saturday or any part thereof may be worked as a make-up day at the straight time rate. Employees who are part of a regular crew on a make-up day, notwithstanding the fact that they may not have been employed the entire week, shall work Saturday at the straight time rate. A workday is to begin between 6:00 a.m. and 9:00 a.m. However, the project starting time may be advanced or delayed if mutually agreed to by the interest parties. For all time worked on recognized holidays, or days observed as such, double (2) time shall be paid.

NO. 32: Means the overtime rate shall be time and one-half the regular rate for work over forty (40) hours per week. Sundays and Holidays shall be paid at double the straight time rate.

**JEFFERSON COUNTY
HOLIDAY SCHEDULE – HEAVY CONSTRUCTION**

NO. 4: All work performed on New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas Day, or observed as such, shall be paid at the double time rate of pay. When a Holiday falls on a Sunday, Monday shall be observed. No work shall be performed on Labor Day, except in case of jeopardy to life or property. This is applied to protect Labor Day.

NO. 9: All work performed on Sundays and the following recognized holidays, or the days observed as such, of New Year's Day, Decoration Day, Fourth of July, Labor Day, Veteran's Day, Thanksgiving Day and Christmas Day, shall be paid at double (2) the hourly rate plus an amount equal to the hourly Total Indicated Fringe Benefits. Whenever any such holidays fall on a Sunday, the following Monday shall be observed as a holiday.

NO. 11: Means all work performed on New Year's Day, Memorial Day, Fourth of July, Labor Day, Veteran's Day, Thanksgiving Day, Christmas Day, and any additional holidays which may be mutually agreed upon shall be paid at the double (2) time rate of pay. Whenever any such holiday falls on a Sunday, the following Monday shall be recognized and observed as the holiday. No work shall be performed on Labor Day.

NO. 12: All work performed on New Year's Day, Memorial Day, Fourth of July, Labor Day, Veteran's Day, Thanksgiving Day, Christmas Day, or days celebrated as such, shall be paid at the double time rate of pay. When one of the foregoing holidays falls on Sunday, it shall be celebrated on the following Monday. When one of the foregoing holidays falls on Saturday, it shall be celebrated on the Friday before the holiday.

NO. 16: The following days are recognized as holidays: New Year's Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day and Christmas Day. If a holiday falls on Sunday, it shall be observed on the following Monday. If a holiday falls on Saturday, it shall be observed on the preceding Friday. No work shall be performed on Labor Day except in case of jeopardy to work under construction. This rule is applied to protect Labor Day. When a holiday falls during the normal work week, Monday through Friday, it shall be counted as eight (8) hours toward the forty (40) hour week; however, no reimbursement for this eight (8) hours is to be paid to the worker unless worked. If workers are required to work the above recognized holidays or days observed as such, they shall receive double (2) the regular rate of pay for such work.

NO. 21: The following days are recognized as holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day. If a holiday falls on a Sunday, it shall be observed on the following Monday. No work shall be performed on Labor Day except in case of jeopardy to work under construction. This rule is applied to protect Labor Day. When a holiday falls during the normal work week, Monday through Friday, it shall be counted as eight (8) hours toward the forty (40) hour week; however, no reimbursement for this eight (8) hours is to be paid the workman unless worked. An Employer working a four (4) day, ten (10) hour schedule may use Friday as a make-up day when an observed holiday occurs during the work week. Employees have the option to work that make-up day. If workmen are required to work the above enumerated holidays, or days observed as such, they shall receive double (2) the regular rate of pay for such work.

NO. 25: The following days are recognized as holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day. If a holiday falls on a Sunday, it shall be observed on the following Monday. No work shall be performed on Labor Day except in case of jeopardy to work under construction. This rule is applied to protect Labor Day. When a holiday falls during the normal work week, Monday through Friday, it shall be counted as eight (8) hours toward the forty (40) hour week; however, no reimbursement for this eight (8) hours is to be paid the workmen unless worked. An Employer working a four (4) day, ten (10) hour schedule may use Friday as a make up day when an observed holiday occurs during the work week. Employees have the option to work that make up day. If workmen are required to work the above enumerated holidays, or days observed as such, they shall receive double (2) the regular rate of pay for such work.

NO. 31: All work performed on New Year's Day, Presidents' Day, Veterans' Day, Good Friday, Decoration Day, Fourth of July, Labor Day, Christmas Eve Day, Christmas Day, Thanksgiving Day and Day after Thanksgiving or days celebrated for the same.

APPLICATION AND CERTIFICATE FOR PAYMENT AIA DOCUMENT G702 (Instructions on reverse side) PAGE ONE OF PAGES

TO OWNER:	PROJECT:	APPLICATION NO.: PERIOD TO: PROJECT NOS.:	Distribution to: <input type="checkbox"/> OWNER <input type="checkbox"/> ARCHITECT <input type="checkbox"/> CONTRACTOR <input type="checkbox"/> <input type="checkbox"/>
FROM CONTRACTOR:	VIA ARCHITECT:	CONTRACT DATE:	
CONTRACT FOR:			

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	\$	By: _____	Date: _____
2. Net change by Change Orders	\$		
3. CONTRACT SUM TO DATE (Line 1 + 2)	\$		
4. TOTAL COMPLETED & STORED TO DATE	\$		
5. RETAINAGE: (Column G on G703)	\$	Notary Public: County of: Subscribed and sworn to before me this _____ day of _____	My Commission expires:
a. ____% of Completed Work (Columns D + E on G703)	\$		
b. ____% of Stored Material (Column F on G703)	\$		
Total Retainage (Line 5a + 5b or Total in Column 1 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			
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: _____

ARCHITECT'S CERTIFICATE FOR PAYMENT

In accordance with the Contract Documents, based on onsite observations and the data comprising this 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 for. Initial all figures on this Application and on the Continuation Sheet that are changed to conform to the amount certified.)

By: _____

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.

Date: _____

G702-1992

AIA DOCUMENT G702 • APPLICATION AND CERTIFICATE FOR PAYMENT • 1992 EDITION • AIA • ©1992 • THE AMERICAN INSTITUTE OF ARCHITECTS, 1735 NEW YORK AVENUE, N.W., WASHINGTON, D.C. 20006-5292 • WARNING: Unlicensed photocopying violates U.S. copyright laws and will subject the violator to legal prosecution.

CAUTION: You should use an original AIA document which has this caution printed in red. An original assures that changes will not be obscured as may occur when documents are reproduced.

CONTINUATION SHEET

AIA Document G702: APPLICATION AND CERTIFICATE FOR PAYMENT

containing Contractor's signed Certification, is attached.

In particular, the following amounts are stated in the nearest dollar.

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

ALL DOCUMENTS © CONTINUATION SHEET FOR GT702 - 1992 EDITION - AIA
AVENUE, NEW YORK, NY 10020-5522 WARNING: Unlicensed photocopying violates U.S. Copyright laws and will subject the violator to legal proceedings.
THE AMERICAN INSTITUTE OF ARCHITECTS 1735 NEW YORK AVENUE, NW, WASHINGTON, DC 20006-5522 ©1992. THE AMERICAN INSTITUTE OF ARCHITECTS - 1735 NEW YORK AVENUE, NW, WASHINGTON, DC 20006-5522

G703-1992

CAUTION: You should use an original AIA document which has this caution printed in red. An original assures that changes will not be obscured as may occur when documents are reproduced.

In Witness thereof, the parties hereto have executed this Agreement, in triplicate, as of this _____ day of _____ 2016:

County of Jefferson, State of Missouri

Company Name

Signature

Kenneth B. Waller County Executive

Print

Company Address: _____

Phone: _____

I hereby certify under section 50.660 RSMo there is either: (1) a balance of funds, otherwise unencumbered, to the credit of the appropriation to which the obligation contained herein is chargeable, and a cash balance otherwise unencumbered, in the treasury, to the credit of the funds from which payment is to be made, each sufficient to meet the obligation contained herein; or (2) bonds or taxes have been authorized by vote of the people and there is a sufficient unencumbered amount of the bonds yet to be sold or of the taxes levied and yet to be collected to meet the obligation in case there is not a sufficient unencumbered cash balance in the treasury.

County Auditor

APPROVED AS TO FORM

County Counselor

COOPERATIVE BID FORM

Bid Name: _____

INSTRUCTIONS: Bidders **MUST** fill out this form as part of the bidding process and attach to your bid response to Jefferson County, Missouri.

COOPERATIVE PROCUREMENT CONTRACT

This is a cooperating supply contract in accordance with Chapter 130, Section 130.020. K.3., of the Procurement Policy and Procedures, Jefferson County Code of Ordinances.

Will you extend bid prices, cash terms, and all other terms and conditions of any contract resulting from this bid with Jefferson County, Missouri, to any Jefferson County, Missouri, Municipality, government agency, district, sub-district or other tax-supported entity?

Yes No

Although agreeing to the extension of the terms of this contract to municipalities or other tax-supported entities, ***is not a prerequisite for award***, Jefferson County, Missouri, may take this factor into consideration if tie bids are received, in addition to the normal Terms and Conditions of the Invitation for Bid, enclosed herewith as a part of this bid.

Bidders are encouraged to extend contract prices to Municipalities and any other tax-supported entities.

If agreeable to the above, state the **minimum** dollar value *per order* you will require from a Municipality or any other tax-supported entity (this shall not apply to Jefferson County, Missouri Government, Departments or Divisions):

MINIMUM DOLLAR VALUE PER ORDER: \$ _____

BY: _____

TITLE: _____

COMPANY: _____

CONTACT INFORMATION FOR COOPERATIVE AGREEMENT

Phone _____ **E-mail** _____

THIS FORM WILL BECOME PART OF THE BID DOCUMENT PACKAGE SUBMITTED TO JEFFERSON COUNTY, MISSOURI

Project Manual for the

Renovation of an Existing Building for use as Jefferson County, Missouri's Emergency Management Offices in Herculaneum, Missouri Phases 2 & 3

Public Works Director:
Jason Jonas, P.E.

Architect:
Steven J. Bacon;
Bacon Commercial Design LLC
PO Box 605/100-A Bailey Road
Crystal City, Missouri 63019
phone (636) 933-0007



Issue Date: 2/11/2016
project number: 15-055-B
printed set #: NA

M/E/P Engineer:
FF Freiner, P.E.
12138 Lowill Avenue
St. Louis, MO 63126
(314) 843-7157



**Jefferson County New Emergency Management & Operations Offices;
Herculaneum, Missouri – Phase II****Project Manual Table of Contents**

Division 00	Procurement & Contracting	1
Division 01	General Requirements	19
Division 02	Existing Conditions	3
Division 03	Concrete	4
Division 04	Masonry – Not Used	1
Division 05	Metals	6
Division 06	Wood & Plastics - Not Used	1
Division 07	Thermal & Moisture Protection	5
Division 08	Openings	15
Division 09	Finishes	17
Division 10	Specialties	5
Division 11	Equipment - Not Used	1
Division 12	Furnishings	5
Division 13	Special Construction- Not Used	1
Division 14	Conveying Equipment - Not Used	1
Division 22	Plumbing	6
Division 23	HVAC	13
Division 26	Electrical	19

List of Drawing Sheets

- G-1 General Project Information, Occupancy/Exiting, Project Location, Building Code Data
- A-1 Existing Building & Demolition Plan
- A-2 New Floor Plan, Floor Finishes Plan
- A-3 Existing & New Reflected Ceiling Plans
- A-4 Building Sections, Enlarged Plans, Details
- A-5 Details, Exterior Elevation, Door Schedule
- M-1 Mechanical Plan - HVAC
- P-1 Mechanical Plan - Plumbing
- E-1 Electrical Plan – Power Plan
- E-2 Electrical Plan - Lighting

SECTION 00-0102
PROJECT INFORMATION

PART 1 GENERAL**1.01 PROJECT IDENTIFICATION**

- A. Project Name: Jefferson County Emergency Mgmt Operations Center - Phases 2&3, located at:
- B. 1403 Herculaneum Industrial Drive; Herculaneum, Missouri
- C. The Owner, hereinafter referred to as Owner: Jefferson County (MO) Public Works Dept
 - 1. Sales Tax Exemption Number: will be provided to selected contractor(s)..
- D. Owner's Project Manager: Jason Jonas, P.E., Director Public Works Department.
 - 1. Address: PO Box 100; 725 Maple, Room 104.
 - 2. Phone/Fax: O: 636-797-5340; F: 636-797-5565.

1.02 PROJECT DESCRIPTION

- A. Summary Project Description: Remodel approximately 3.725 interior square feet of an existing building for use as Emergency Management for use as Situation and Command Center..
- B. Contract Scope: demolition and renovation.
- C. Contract Terms: Lump sum (fixed price, stipulated sum).

1.03 PROJECT CONSULTANTS

- A. The Architect, hereinafter referred to as Architect: Steven Bacon; Bacon Commercial Design LLC.
 - 1. PO Box 605; Crystal City, MO 63019. 636-933-0007. SJBacon@BCD-LLC.com
- B. Mechanical/Electrical Engineer: FF Freiner, PE; 314-843-7157

1.04 PROCUREMENT DOCUMENTS

- A. Availability of Documents: Complete sets of procurement documents may be obtained:
 - 1. From Owner at the Project Manager's address listed above.

END OF SECTION

SECTION 01-0001
DIVISION 1 - GENERAL REQUIREMENTS

SECTION 01-1000
SUMMARY

PART 1 GENERAL**1.01 PROJECT**

- A. Project Name: Jefferson County Emergency Mgmt Operations Center - Phases 2&3
- B. Owner's Name: Jefferson County (MO) Public Works Dept.
- C. Architect's Name: Bacon Commercial Design LLC.

1.02 DESCRIPTION OF ALTERATIONS WORK

- A. Scope of demolition and removal work is shown on drawings and specified in Section 02-4100.
- B. Scope of alterations work is shown on drawings.
- C. Renovate the following areas, complete including operational mechanical and electrical work and finishes:
 1. Phase 2: Approximately 1,950 sf at center of existing building.
 2. Phase 3: Approximately 1,725 sf at west end of building.
- D. Plumbing: add one janitor's sink and one kitchen sink.
- E. HVAC: Add new HVAC system for remodeled area..
- F. Electrical Power and Lighting: Provide new electrical service and Auto Transfer switch; new low voltage distribution in remodeled portion(s) of building; maintain and re-connect low voltage distribution in previously remodeled area..
- G. Fire Suppression Sprinklers: None.
- H. Fire Alarm: None.

1.03 WORK BY OWNER

- A. Items noted NIC (Not in Contract) will be supplied and installed by Owner before Substantial Completion.
- B. Owner will supply the following for installation by Contractor:
 1. IT equipment.
 2. Movable Equipment.
 3. Wall mounted monitors.

1.04 FUTURE WORK

- A. Project is designed for future additional renovation of other parts of building.

1.05 OWNER OCCUPANCY

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

1.06 CONTRACTOR USE OF SITE AND PREMISES

- A. Arrange use of site and premises to allow:
 1. Owner occupancy.
 2. Work by Others.
- B. Provide access to and from site as required by law and by Owner:
 1. Emergency Building Exits During Construction: Keep all exits required by code open during construction period; provide temporary exit signs if exit routes are temporarily altered.
 2. Do not obstruct roadways, sidewalks, or other public ways without permit.
- C. Utility Outages and Shutdown:
 1. Limit shutdown of utility services to eight hours at a time, arranged at least 24 hours in advance with Owner.

2. Prevent accidental disruption of utility services to other facilities.

END OF SECTION

SECTION 01-3000
ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL**1.01 SECTION INCLUDES**

- A. Preconstruction meeting.
- B. Construction progress schedule.
- C. Submittal procedures.

1.02 PROJECT COORDINATION

- A. During construction, coordinate use of site and facilities through the Project Coordinator.
- B. Comply with Project Coordinator's procedures for intra-project communications; submittals, reports and records, schedules, coordination drawings, and recommendations; and resolution of ambiguities and conflicts.
- C. Comply with instructions of the Project Coordinator for use of temporary utilities and construction facilities.
- D. Coordinate field engineering and layout work under instructions of the Project Coordinator.
- E. Make the following types of submittals to Architect through the Project Coordinator:
 1. Requests for interpretation.
 2. Requests for substitution.
 3. Shop drawings, product data, and samples.
 4. Test and inspection reports.
 5. Design data.
 6. Manufacturer's instructions and field reports.
 7. Applications for payment and change order requests.
 8. Progress schedules.
 9. Coordination drawings.
 10. Correction Punch List and Final Correction Punch List for Substantial Completion.
 11. Closeout submittals.

PART 2 PRODUCTS - NOT USED**PART 3 EXECUTION****3.01 PRECONSTRUCTION MEETING**

- A. Owner will schedule a meeting after Notice of Award.
- B. Attendance Required:
 1. Owner.
 2. Architect.
 3. Contractor.
 4. Major Subcontractors' representatives.
- C. Agenda:
 1. Submission of executed bonds and insurance certificates.
 2. Distribution of Contract Documents.
 3. Designation of personnel representing the parties to Contract, Owner, General Contractor and Architect.
 4. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
 5. Scheduling.
- D. Record minutes and distribute copies within two days after meeting to participants, with copies to Architect, Owner, participants, and those affected by decisions made.

3.02 CONSTRUCTION PROGRESS SCHEDULE

- A. Within 10 days after date of the Agreement, submit preliminary schedule .

B. Within 10 days after joint review, submit complete schedule.

END OF SECTION

SECTION 01-4000
QUALITY REQUIREMENTS

PART 1 GENERAL**1.01 SECTION INCLUDES**

- A. Submittals.
- B. Control of installation.
- C. Testing and inspection services.

1.02 SUBMITTALS

- A. See Section 01-3000 - Administrative Requirements, for submittal procedures.
- B. Design Data: Submit for Architect's knowledge as contract administrator for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents, or for Owner's information.
- C. Manufacturer's Instructions: When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, for the Owner's information. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

1.03 REFERENCES AND STANDARDS - SEE SECTION 01-4219**PART 3 EXECUTION****2.01 CONTROL OF INSTALLATION**

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality.
- B. Comply with manufacturers' instructions, including each step in sequence.
- C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect before proceeding.
- D. Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Have Work performed by persons qualified to produce required and specified quality.
- F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.
- G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, and disfigurement.

2.02 DEFECT ASSESSMENT

- A. Replace Work or portions of the Work not conforming to specified requirements.
- B. If, in the opinion of Architect, it is not practical to remove and replace the Work, Architect will direct an appropriate remedy or adjust payment.

END OF SECTION

SECTION 01-4100
REGULATORY REQUIREMENTS

PART 1 GENERAL

1.01 SUMMARY

- A. Regulatory requirements applicable to this project are the following:
- B. 28 CFR 36 - Department of Justice accessibility regulations relating to public accommodations; current edition.
- C. 36 CFR 1191 - Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities; Architectural Barriers Act (ABA) Accessibility Guidelines; current edition.
- D. ADA Standards - Americans with Disabilities Act (ADA) Standards for Accessible Design; 2010.
- E. 29 CFR 1910 - Occupational Safety and Health Standards; current edition; as a work place.
- F. ICC (IFC) - ICC International Fire Code, 2009.
- G. NFPA 101 - Life Safety Code, 2015.
- H. ICC (IBC) - ICC International Building Code, 2015.
- I. ICC (IPC) - ICC International Plumbing Code, 2009.
- J. ICC (IMC) - ICC International Mechanical Code, 2009.
- K. ICC (IFGC) - ICC International Fuel Gas Code, 2009.
- L. NFPA 70 - National Electrical Code; Most recent edition adopted by Authority Having Jurisdiction, including all applicable Amendments and Supplements.

END OF SECTION

SECTION 01-4216**DEFINITIONS****PART 1 GENERAL****1.01 SUMMARY**

A. Other definitions are included in individual specification sections.

1.02 DEFINITIONS

A. Furnish: To supply, deliver, unload, and inspect for damage.

B. Install: To unpack, assemble, erect, apply, place, finish, cure, protect, clean, start up, and make ready for use.

C. Product: Material, machinery, components, equipment, fixtures, and systems forming the work result. Not materials or equipment used for preparation, fabrication, conveying, or erection and not incorporated into the work result. Products may be new, never before used, or re-used materials or equipment.

D. Project Manual: The book-sized volume that includes the procurement requirements (if any), the contracting requirements, and the specifications.

E. Provide: To furnish and install.

F. Supply: Same as Furnish.

END OF SECTION

SECTION 01-5000
TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL**1.01 SECTION INCLUDES**

- A. Temporary utilities.
- B. Temporary sanitary facilities.
- C. Waste removal facilities and services.
- D. Project identification sign.

1.02 TEMPORARY UTILITIES

- A. Owner will provide the following:
 1. Electrical power and metering, consisting of connection to existing facilities.
 2. Water supply, consisting of connection to existing facilities.
- B. Use trigger-operated nozzles for water hoses, to avoid waste of water.

1.03 TEMPORARY SANITARY FACILITIES

- A. Owner will provide and maintain required facilities and enclosures for duration of project, or arrange for use of existing facilities on site.

1.04 VEHICULAR ACCESS AND PARKING - SEE SECTION 01-5500

- A. Comply with regulations relating to use of streets and sidewalks, access to emergency facilities, and access for emergency vehicles.
- B. Coordinate access and haul routes with governing authorities and Owner.
- C. Provide and maintain access to fire hydrants, free of obstructions.
- D. Provide means of removing mud from vehicle wheels before entering streets.
- E. Provide temporary parking areas to accommodate construction personnel. When site space is not adequate, provide additional off-site parking.

1.05 WASTE REMOVAL

- A. Provide waste removal facilities and services as required to maintain the site in clean and orderly condition.
- B. Provide containers with lids. Remove trash from site periodically.
- C. If materials to be recycled or re-used on the project must be stored on-site, provide suitable non-combustible containers; locate containers holding flammable material outside the structure unless otherwise approved by the authorities having jurisdiction.
- D. Open free-fall chutes are not permitted. Terminate closed chutes into appropriate containers with lids.

1.06 PROJECT IDENTIFICATION

- A. Erect on site at location established by Architect.
- B. Provide project identification sign of design, construction, and location approved by Owner.
- C. No other signs are allowed without Owner permission except those required by law.

END OF SECTION

SECTION 01-6000
PRODUCT REQUIREMENTS

PART 1 GENERAL**1.01 SECTION INCLUDES**

- A. Re-use of existing products.
- B. Transportation, handling, storage and protection.
- C. Product option requirements.
- D. Substitution limitations and procedures.
- E. Maintenance materials, including extra materials, spare parts, tools, and software.

1.02 SUBMITTALS

- A. Product Data Submittals: Submit manufacturer's standard published data. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.
- B. Shop Drawing Submittals: Prepared specifically for this Project; indicate utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.
- C. Sample Submittals: Illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
 - 1. For selection from standard finishes, submit samples of the full range of the manufacturer's standard colors, textures, and patterns.

PART 2 PRODUCTS**2.01 EXISTING PRODUCTS**

- A. Do not use materials and equipment removed from existing premises unless specifically required or permitted by the Contract Documents.
- B. Unforeseen historic items encountered remain the property of the Owner; notify Owner promptly upon discovery; protect, remove, handle, and store as directed by Owner.
- C. Existing materials and equipment indicated to be removed, but not to be re-used, relocated, reinstalled, delivered to the Owner, or otherwise indicated as to remain the property of the Owner, become the property of the Contractor; remove from site.

2.02 NEW PRODUCTS

- A. Provide new products unless specifically required or permitted by the Contract Documents.
- B. DO NOT USE products having any of the following characteristics:
 - 1. Made using or containing CFC's or HCFC's.
 - 2. Made of wood from newly cut old growth timber.
- C. Where all other criteria are met, Contractor shall give preference to products that:
 - 1. If used on interior, have lower emissions, as defined in Section 01-6116.
 - 2. If wet-applied, have lower VOC content, as defined in Section 01-6116.
 - 3. Are extracted, harvested, and/or manufactured closer to the location of the project.
 - 4. Have longer documented life span under normal use.
 - 5. Result in less construction waste.
 - 6. Are made of recycled materials.
 - 7. If made of wood, are made of sustainably harvested wood, wood chips, or wood fiber.
 - 8. Have a published GreenScreen Chemical Hazard Analysis.

2.03 PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.
- B. Products Specified by Naming One or More Manufacturers: Use a product of one of the manufacturers named and meeting specifications, no options or substitutions allowed.

C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named.

2.04 MAINTENANCE MATERIALS

- A. Furnish extra materials, spare parts, tools, and software of types and in quantities specified in individual specification sections.
- B. Deliver to Project site; obtain receipt prior to final payment.

PART 3 EXECUTION

3.01 SUBSTITUTION PROCEDURES

- A. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents.
- B. A request for substitution constitutes a representation that the submitter:
 1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product.
 2. Agrees to provide the same warranty for the substitution as for the specified product.
 3. Agrees to coordinate installation and make changes to other Work that may be required for the Work to be complete with no additional cost to Owner.
 4. Waives claims for additional costs or time extension that may subsequently become apparent.
 5. Agrees to reimburse Owner and Architect for review or redesign services associated with re-approval by authorities.
- C. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals, without separate written request, or when acceptance will require revision to the Contract Documents.

3.02 TRANSPORTATION AND HANDLING

- A. Package products for shipment in manner to prevent damage; for equipment, package to avoid loss of factory calibration.
- B. If special precautions are required, attach instructions prominently and legibly on outside of packaging.
- C. Coordinate schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.
- D. Transport and handle products in accordance with manufacturer's instructions.
- E. Transport materials in covered trucks to prevent contamination of product and littering of surrounding areas.
- F. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.
- G. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage, and to minimize handling.
- H. Arrange for the return of packing materials, such as wood pallets, where economically feasible.

3.03 STORAGE AND PROTECTION

- A. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication.
- B. Store and protect products in accordance with manufacturers' instructions.
- C. Store with seals and labels intact and legible.
- D. Store sensitive products in weather tight, climate controlled, enclosures in an environment favorable to product.
- E. For exterior storage of fabricated products, place on sloped supports above ground.
- F. Protect products from damage or deterioration due to construction operations, weather, precipitation, humidity, temperature, sunlight and ultraviolet light, dirt, dust, and other contaminants.
- G. Comply with manufacturer's warranty conditions, if any.

- H. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.
- I. Prevent contact with material that may cause corrosion, discoloration, or staining.
- J. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
- K. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

END OF SECTION

SECTION 01-6116
VOLATILE ORGANIC COMPOUND (VOC) CONTENT RESTRICTIONS

PART 1 GENERAL**1.01 SECTION INCLUDES**

- A. Requirements for Indoor-Emissions-Restricted products.

1.02 DEFINITIONS

- A. Indoor-Emissions-Restricted Products: All products in the following product categories, whether specified or not:
 1. Interior paints and coatings.
 2. Interior adhesives and sealants, including flooring adhesives.
 3. Flooring.
 4. Products making up wall and ceiling assemblies.
 5. Other products when specifically stated in the specifications.
- B. Interior of Building: Anywhere inside the exterior weather barrier.
- C. Adhesives: All gunnable, trowelable, liquid-applied, and aerosol adhesives, whether specified or not; including flooring adhesives, resilient base adhesives, and pipe jointing adhesives.
- D. Sealants: All gunnable, trowelable, and liquid-applied joint sealants and sealant primers, whether specified or not; including firestopping sealants and duct joint sealers.
- E. Inherently Non-Emitting Materials: Products composed wholly of minerals or metals, unless they include organic-based surface coatings, binders, or sealants; and specifically the following:
 1. Concrete.
 2. Clay brick.
 3. Metals that are plated, anodized, or powder-coated.
 4. Glass.
 5. Ceramics.
 6. Solid wood flooring that is unfinished and untreated.

1.03 SUBMITTALS

- A. See Section 01-3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: For each VOC-restricted product used in the project, submit evidence of compliance.

PART 2 PRODUCTS**2.01 MATERIALS**

- A. All Products: Comply with the most stringent of federal, State, and local requirements, or these specifications.

PART 3 EXECUTION**3.01 FIELD QUALITY CONTROL**

- A. Owner reserves the right to reject non-compliant products, whether installed or not, and require their removal and replacement with compliant products at no extra cost to Owner.
- B. Additional costs to restore indoor air quality due to installation of non-compliant products will be borne by Contractor.

END OF SECTION

SECTION 01-7000
EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 GENERAL**1.01 SECTION INCLUDES**

- A. Examination, preparation, and general installation procedures.
- B. Requirements for alterations work, including selective demolition, except removal, disposal, and/or remediation of hazardous materials and toxic substances.
- C. Cutting and patching.
- D. Cleaning and protection.
- E. Closeout procedures, including Contractor's Correction Punch List, except payment procedures.
- F. General requirements for maintenance service.

1.02 REFERENCE STANDARDS

- A. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations; 2013.

1.03 SUBMITTALS

- A. See Section 01-3000 - Administrative Requirements, for submittal procedures.
- B. Cutting and Patching: Submit written request in advance of cutting or alteration that affects:
 - 1. Structural integrity of any element of Project.
 - 2. Integrity of weather exposed or moisture resistant element.
 - 3. Efficiency, maintenance, or safety of any operational element.
 - 4. Visual qualities of sight exposed elements.
 - 5. Work of Owner or separate Contractor.
- C. Project Record Documents: Accurately record actual locations of capped and active utilities.

1.04 PROJECT CONDITIONS

- A. Use of explosives is not permitted.
- B. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.
- C. Dust Control: Execute work by methods to minimize raising dust from construction operations. Provide positive means to prevent air-borne dust from dispersing into atmosphere and over adjacent property.
 - 1. Provide dust-proof barriers between construction areas and areas continuing to be occupied by Owner.
- D. Noise Control: Provide methods, means, and facilities to minimize noise produced by construction operations.
- E. Pest and Rodent Control: Provide methods, means, and facilities to prevent pests and insects from damaging the work.
- F. Rodent Control: Provide methods, means, and facilities to prevent rodents from accessing or invading premises.

1.05 COORDINATION

- A. Coordinate scheduling, submittals, and work of the various sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.
- B. Notify affected utility companies and comply with their requirements.
- C. Verify that utility requirements and characteristics of new operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
- D. Coordinate space requirements, supports, and installation of mechanical and electrical work that are indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.

- E. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.
- F. Coordinate completion and clean-up of work of separate sections.
- G. After Owner occupancy of premises, coordinate access to site for correction of defective work and work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

PART 2 PRODUCTS

2.01 PATCHING MATERIALS

- A. New Materials: As specified in product sections; match existing products and work for patching and extending work.
- B. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing work as a standard.
- C. Product Substitution: For any proposed change in materials, submit request for substitution described in Section 01-6000 - Product Requirements.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Start of work means acceptance of existing conditions.
- B. Verify that existing substrate is capable of structural support or attachment of new work being applied or attached.
- C. Examine and verify specific conditions described in individual specification sections.
- D. Take field measurements before confirming product orders or beginning fabrication, to minimize waste due to over-ordering or misfabrication.
- E. Verify that utility services are available, of the correct characteristics, and in the correct locations.
- F. Prior to Cutting: Examine existing conditions prior to commencing work, including elements subject to damage or movement during cutting and patching. After uncovering existing work, assess conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions.

3.02 PREPARATION

- A. Clean substrate surfaces prior to applying next material or substance.
- B. Seal cracks or openings of substrate prior to applying next material or substance.
- C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

3.03 GENERAL INSTALLATION REQUIREMENTS

- A. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.
- B. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.
- C. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.
- D. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.
- E. Make neat transitions between different surfaces, maintaining texture and appearance.

3.04 ALTERATIONS

- A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
 1. Verify that construction and utility arrangements are as shown.
 2. Verify locations of existing items to remain in place. Confirm proposed new construction is compatible with existing conditions to remain.
 3. Report discrepancies to Architect before disturbing existing installation.
 4. Beginning of alterations work constitutes acceptance of existing conditions.

- B. Keep areas in which alterations are being conducted separated from other areas that are still occupied.
 - 1. Provide, erect, and maintain temporary dustproof partitions of construction specified in Section 01-5000 in locations indicated on drawings.
- C. Remove existing work as indicated and as required to accomplish new work.
 - 1. Remove rotted wood, corroded metals, and deteriorated masonry and concrete; replace with new construction specified.
 - 2. Remove items indicated on drawings.
 - 3. Relocate items indicated on drawings.
 - 4. Where new surface finishes are to be applied to existing work, perform removals, patch, and prepare existing surfaces as required to receive new finish; remove existing finish if necessary for successful application of new finish.
 - 5. Where new surface finishes are not specified or indicated, patch holes and damaged surfaces to match adjacent finished surfaces as closely as possible.
- D. Services (Including but not limited to HVAC, Plumbing, and Electrical): Remove, relocate, and extend existing systems to accommodate new construction.
 - 1. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components; if necessary, modify installation to allow access or provide access panel.
 - 2. Verify that abandoned services serve only abandoned facilities.
 - 3. Remove abandoned pipe, ducts, conduits, and equipment, including those above accessible ceilings; remove back to source of supply where possible, otherwise cap stub and tag with identification; patch holes left by removal using materials specified for new construction.
- E. Protect existing work to remain.
 - 1. Prevent movement of structure; provide shoring and bracing if necessary.
 - 2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
 - 3. Repair adjacent construction and finishes damaged during removal work.
- F. Adapt existing work to fit new work: Make as neat and smooth transition as possible.
 - 1. When existing finished surfaces are cut so that a smooth transition with new work is not possible, terminate existing surface along a straight line at a natural line of division and make recommendation to Architect.
 - 2. Where removal of partitions or walls results in adjacent spaces becoming one, rework floors, walls, and ceilings to a smooth plane without breaks, steps, or bulkheads.
 - 3. Where a change of plane of 1/4 inch or more occurs in existing work, submit recommendation for providing a smooth transition for Architect review and request instructions.
- G. Patching: Where the existing surface is not indicated to be refinished, patch to match the surface finish that existed prior to cutting. Where the surface is indicated to be refinished, patch so that the substrate is ready for the new finish.
- H. Refinish existing surfaces as indicated:
 - 1. Where rooms or spaces are indicated to be refinished, refinish all visible existing surfaces to remain to the specified condition for each material, with a neat transition to adjacent finishes.
 - 2. If mechanical or electrical work is exposed accidentally during the work, re-cover and refinish to match.
- I. Clean existing systems and equipment.
- J. Remove demolition debris and abandoned items from alterations areas and dispose of off-site; do not burn or bury.
- K. Do not begin new construction in alterations areas before demolition is complete.
- L. Comply with all other applicable requirements of this section.

3.05 CUTTING AND PATCHING

- A. Whenever possible, execute the work by methods that avoid cutting or patching.
- B. See Alterations article above for additional requirements.
- C. Perform whatever cutting and patching is necessary to:
 - 1. Complete the work.
 - 2. Fit products together to integrate with other work.

3. Provide openings for penetration of mechanical, electrical, and other services.
4. Match work that has been cut to adjacent work.
5. Repair areas adjacent to cuts to required condition.
6. Repair new work damaged by subsequent work.
7. Remove samples of installed work for testing when requested.
8. Remove and replace defective and non-conforming work.

- D. Execute work by methods that avoid damage to other work and that will provide appropriate surfaces to receive patching and finishing. In existing work, minimize damage and restore to original condition.
- E. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.
- F. Restore work with new products in accordance with requirements of Contract Documents.
- G. Fit work air tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- H. At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with fire rated material in accordance with Section 07-8400, to full thickness of the penetrated element.
- I. Patching:
 1. Finish patched surfaces to match finish that existed prior to patching. On continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.
 2. Match color, texture, and appearance.
 3. Repair patched surfaces that are damaged, lifted, discolored, or showing other imperfections due to patching work. If defects are due to condition of substrate, repair substrate prior to repairing finish.

3.06 PROGRESS CLEANING

- A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.
- B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.
- C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.
- D. Collect and remove waste materials, debris, and trash/rubbish from site periodically and dispose off-site; do not burn or bury.

3.07 PROTECTION OF INSTALLED WORK

- A. Protect installed work from damage by construction operations.
- B. Provide special protection where specified in individual specification sections.
- C. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.
- D. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.
- E. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
- F. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.
- G. Remove protective coverings when no longer needed; reuse or recycle plastic coverings if possible.

3.08 ADJUSTING

- A. Adjust operating products and equipment to ensure smooth and unhindered operation.

3.09 FINAL CLEANING

- A. Execute final cleaning after Substantial Completion but before making final application for payment.
- B. Use cleaning materials that are nonhazardous.
- C. Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces,
- D. Remove all labels that are not permanent. Do not paint or otherwise cover fire test labels or nameplates on mechanical and electrical equipment.

- E. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.
- F. Clean filters of operating equipment.
- G. Clean debris from roofs, gutters, downspouts, scuppers, overflow drains, area drains, drainage systems, and _____.
- H. Clean site; sweep paved areas, rake clean landscaped surfaces.
- I. Remove waste, surplus materials, trash/rubbish, and construction facilities from the site; dispose of in legal manner; do not burn or bury.

3.10 CLOSEOUT PROCEDURES

- A. Make submittals that are required by governing or other authorities.
- B. Accompany Project Coordinator on preliminary inspection to determine items to be listed for completion or correction in the Contractor's Correction Punch List for Contractor's Notice of Substantial Completion.
- C. Notify Architect when work is considered ready for Architect's Substantial Completion inspection.
- D. Submit written certification containing Contractor's Correction Punch List, that Contract Documents have been reviewed, work has been inspected, and that work is complete in accordance with Contract Documents and ready for Architect's Substantial Completion inspection.
- E. Conduct Substantial Completion inspection and create Final Correction Punch List containing Architect's and Contractor's comprehensive list of items identified to be completed or corrected and submit to Architect.
- F. Correct items of work listed in Final Correction Punch List and comply with requirements for access to Owner-occupied areas.
- G. Notify Architect when work is considered finally complete and ready for Architect's Substantial Completion final inspection.
- H. Complete items of work determined by Architect listed in executed Certificate of Substantial Completion.

3.11 MAINTENANCE

- A. Provide service and maintenance of components indicated in specification sections.
- B. Maintenance Period: As indicated in specification sections or, if not indicated, not less than 12 months from the Date of Substantial Completion or the length of the specified warranty, whichever is longer.
- C. Examine system components at a frequency consistent with reliable operation. Clean, adjust, and lubricate as required.
- D. Include systematic examination, adjustment, and lubrication of components. Repair or replace parts whenever required. Use parts produced by the manufacturer of the original component.
- E. Maintenance service shall not be assigned or transferred to any agent or subcontractor without prior written consent of the Owner.

END OF SECTION

SECTION 01-7800
CLOSEOUT SUBMITTALS

PART 1 GENERAL**1.01 SECTION INCLUDES**

- A. Project Record Documents.
- B. Warranties and bonds.

1.02 SUBMITTALS

- A. Project Record Documents: Submit documents to Architect prior to approval of final application for payment..
- B. Warranties and Bonds:
 1. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within 10 days after acceptance.
 2. Make other submittals within 10 days after Date of Substantial Completion, prior to final Application for Payment.
 3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within 10 days after acceptance, listing the date of acceptance as the beginning of the warranty period.

PART 2 PRODUCTS - NOT USED**PART 3 EXECUTION****3.01 PROJECT RECORD DOCUMENTS**

- A. Maintain on site one set of the following record documents; record actual revisions to the Work:
 1. Drawings.
 2. Addenda.
 3. Change Orders and other modifications to the Contract.
 4. Reviewed shop drawings, product data, and samples.
 5. Manufacturer's instruction for assembly, installation, and adjusting.
- B. Ensure entries are complete and accurate, enabling future reference by Owner.
- C. Store record documents separate from documents used for construction.
- D. Record information concurrent with construction progress.
- E. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction including:
 1. Measured depths of foundations in relation to finish first floor datum.
 2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 3. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
 4. Field changes of dimension and detail.
 5. Details not on original Contract drawings.

3.02 WARRANTIES AND BONDS

- A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within 10 days after completion of the applicable item of work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until Date of Substantial completion is determined.
- B. Verify that documents are in proper form, contain full information, and are notarized.
- C. Co-execute submittals when required.
- D. Retain warranties and bonds until time specified for submittal.
- E. Include originals of each in operation and maintenance manuals, indexed separately on Table of Contents.

END OF SECTION

SECTION 02-0001
DIVISION 02 - EXISTING CONDITIONS

SECTION 02-4100
DEMOLITION

PART 1 GENERAL**1.01 SECTION INCLUDES**

- A. Selective demolition of building elements for alteration purposes.

1.02 REFERENCE STANDARDS

- A. 29 CFR 1926 - U.S. Occupational Safety and Health Standards; current edition.

1.03 SUBMITTALS

- A. See Section 01-3000 - Administrative Requirements, for submittal procedures.
- B. Project Record Documents: Accurately record actual locations of capped and active utilities and subsurface construction.

PART 2 PRODUCTS -- NOT USED**PART 3 EXECUTION****3.01 GENERAL PROCEDURES AND PROJECT CONDITIONS**

- A. Comply with other requirements specified in Section 01-7000.
- B. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
 1. Obtain required permits.
 2. Provide, erect, and maintain temporary barriers and security devices.
 3. Use physical barriers to prevent access to areas that could be hazardous to workers or the public.
 4. Conduct operations to minimize effects on and interference with adjacent structures and occupants.
 5. Do not close or obstruct roadways or sidewalks without permit.
 6. Conduct operations to minimize obstruction of public and private entrances and exits; do not obstruct required exits at any time; protect persons using entrances and exits from removal operations.
 7. Obtain written permission from owners of adjacent properties when demolition equipment will traverse, infringe upon or limit access to their property.
- C. Protect existing structures and other elements that are not to be removed.
 1. Provide bracing and shoring.
 2. Prevent movement or settlement of adjacent structures.
 3. Stop work immediately if adjacent structures appear to be in danger.
- D. Hazardous Materials: Comply with 29 CFR 1926 and state and local regulations.

3.02 EXISTING UTILITIES

- A. Coordinate work with utility companies; notify before starting work and comply with their requirements; obtain required permits.
- B. Protect existing utilities to remain from damage.
- C. Do not disrupt public utilities without permit from authority having jurisdiction.
- D. Do not close, shut off, or disrupt existing life safety systems that are in use without at least 7 days prior written notification to Owner.
- E. Do not close, shut off, or disrupt existing utility branches or take-offs that are in use without at least 3 days prior written notification to Owner.
- F. Locate and mark utilities to remain; mark using highly visible tags or flags, with identification of utility type; protect from damage due to subsequent construction, using substantial barricades if necessary.
- G. Remove exposed piping, valves, meters, equipment, supports, and foundations of disconnected and abandoned utilities.

3.03 SELECTIVE DEMOLITION FOR ALTERATIONS

- A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.

1. Verify that construction and utility arrangements are as shown.
2. Report discrepancies to Architect before disturbing existing installation.
3. Beginning of demolition work constitutes acceptance of existing conditions that would be apparent upon examination prior to starting demolition.

B. Maintain weatherproof exterior building enclosure except for interruptions required for replacement or modifications; take care to prevent water and humidity damage.

C. Remove existing work as indicated and as required to accomplish new work.

1. Remove rotted wood, corroded metals, and deteriorated masonry and concrete; replace with new construction specified.
2. Remove items indicated on drawings.

D. Protect existing work to remain.

1. Prevent movement of structure; provide shoring and bracing if necessary.
2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
3. Repair adjacent construction and finishes damaged during removal work.
4. Patch as specified for patching new work.

3.04 DEBRIS AND WASTE REMOVAL

- A. Remove debris, junk, and trash from site.
- B. Leave site in clean condition, ready for subsequent work.
- C. Clean up spillage and wind-blown debris from public and private lands.

END OF SECTION

SECTION 03-0001
DIVISION 3 - CONCRETE

SECTION 03-3000
CAST-IN-PLACE CONCRETE

PART 1 GENERAL**1.01 SECTION INCLUDES**

- A. Concrete formwork.
- B. Concrete reinforcement.
- C. Joint devices associated with concrete work.
- D. Miscellaneous concrete elements, including equipment pads and stem walls at existing openings to be infilled.
- E. Concrete curing.

1.02 REFERENCE STANDARDS

- A. ACI 117 - Standard Specifications for Tolerances for Concrete Construction and Materials; American Concrete Institute International; 2010.
- B. ACI 211.1 - Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete; American Concrete Institute International; 1991 (Reapproved 2009).
- C. ACI 301 - Specifications for Structural Concrete; American Concrete Institute International; 2010 (Errata 2012).
- D. ACI 304R - Guide for Measuring, Mixing, Transporting, and Placing Concrete; American Concrete Institute International; 2000.
- E. ACI 305R - Hot Weather Concreting; American Concrete Institute International; 2010.
- F. ACI 306R - Cold Weather Concreting; American Concrete Institute International; 2010.
- G. ACI 308R - Guide to Curing Concrete; American Concrete Institute International; 2001 (Reapproved 2008).
- H. ACI 318 - Building Code Requirements for Structural Concrete and Commentary; American Concrete Institute International; 2011.
- I. ACI 347 - Guide to Formwork for Concrete; American Concrete Institute International; 2004.
- J. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon Billet-Steel Bars for Concrete Reinforcement; 2015.
- K. ASTM C33/C33M - Standard Specification for Concrete Aggregates; 2013.
- L. ASTM C39/C39M - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens; 2014.
- M. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete; 2015.
- N. ASTM C150/C150M - Standard Specification for Portland Cement; 2012.
- O. ASTM C618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete; 2012.
- P. ASTM C685/C685M - Standard Specification for Concrete Made by Volumetric Batching and Continuous Mixing; 2014.
- Q. ASTM C881/C881M - Standard Specification for Epoxy-Resin-Base Bonding Systems for Concrete; 2013.
- R. ASTM C1059/C1059M - Standard Specification for Latex Agents for Bonding Fresh to Hardened Concrete; 2013.
- S. NSF 61 - Drinking Water System Components - Health Effects; 2014 (Errata 2015).
- T. NSF 372 - Drinking Water System Components - Lead Content; 2011.

1.03 SUBMITTALS

- A. See Section 01-3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Submit manufacturers' data on manufactured products showing compliance with specified requirements and installation instructions.

- C. Mix Design: Submit proposed concrete mix design.
 - 1. Indicate proposed mix design complies with requirements of ACI 301, Section 4 - Concrete Mixtures.
 - 2. Indicate proposed mix design complies with requirements of ACI 318, Chapter 5 - Concrete Quality, Mixing and Placing.
- D. Project Record Documents: Accurately record actual locations of embedded utilities and components that will be concealed from view upon completion of concrete work.

1.04 QUALITY ASSURANCE

- A. Perform work of this section in accordance with ACI 301 and ACI 318.
- B. Follow recommendations of ACI 305R when concreting during hot weather.
- C. Follow recommendations of ACI 306R when concreting during cold weather.

PART 2 PRODUCTS

2.01 FORMWORK

- A. Formwork Design and Construction: Comply with guidelines of ACI 347 to provide formwork that will produce concrete complying with tolerances of ACI 117.
- B. Form Materials: Contractor's choice of standard products with sufficient strength to withstand hydrostatic head without distortion in excess of permitted tolerances.
 - 1. Form Ties: Cone snap type that will leave no metal within 1-1/2 inches of concrete surface.

2.02 REINFORCEMENT

- A. Reinforcing Steel: ASTM A615/A615M, Grade 60 (60,000 psi).
 - 1. Type: Deformed billet-steel bars.
 - 2. Finish: Unfinished, unless otherwise indicated.
- B. Reinforcement Accessories:
 - 1. Tie Wire: Annealed, minimum 16 gage, 0.0508 inch.
 - 2. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for adequate support of reinforcement during concrete placement.

2.03 CONCRETE MATERIALS

- A. Cement: ASTM C150, Type I - Normal Portland type.
 - 1. Acquire all cement for entire project from same source.
- B. Fine and Coarse Aggregates: ASTM C 33.
- C. Fly Ash: ASTM C618, Class C or F.
- D. Water: Clean and not detrimental to concrete.

2.04 BONDING AND JOINTING PRODUCTS

- A. Latex Bonding Agent: Non-redispersable acrylic latex, complying with ASTM C1059/C1059M, Type II.
- B. Epoxy Bonding System:
- C. Waterstops: Bentonite and butyl rubber, complying with NSF 61 and NSF 372.

2.05 CONCRETE MIX DESIGN

- A. Proportioning Normal Weight Concrete: Comply with ACI 211.1 recommendations.
- B. Normal Weight Concrete:
 - 1. Compressive Strength, when tested in accordance with ASTM C39/C39M at 28 days: 3,500 psi.
 - 2. Fly Ash Content: Maximum 15 percent of cementitious materials by weight.
 - 3. Maximum Slump: 3 inches.
 - 4. Maximum Aggregate Size: 5/8 inch.

2.06 MIXING

- A. On Project Site: Mix in drum type batch mixer, complying with ASTM C685. Mix each batch not less than 1-1/2 minutes and not more than 5 minutes.
- B. Transit Mixers: Comply with ASTM C94/C94M.

PART 3 EXECUTION**3.01 EXAMINATION**

- A. Verify lines, levels, and dimensions before proceeding with work of this section.

3.02 PREPARATION

- A. Formwork: Comply with requirements of ACI 301. Design and fabricate forms to support all applied loads until concrete is cured, and for easy removal without damage to concrete.
- B. Where new concrete is to be bonded to previously placed concrete, prepare existing surface by cleaning with steel brush and applying bonding agent in accordance with manufacturer's instructions.
 1. Use epoxy bonding system for bonding to damp surfaces, for structural load-bearing applications, and where curing under humid conditions is required.
 2. Use latex bonding agent only for non-load-bearing applications.
- C. In locations where new concrete is doweled to existing work, drill holes in existing concrete, insert steel dowels and pack solid with non-shrink grout.

3.03 INSTALLING REINFORCEMENT AND OTHER EMBEDDED ITEMS

- A. Comply with requirements of ACI 301. Clean reinforcement of loose rust and mill scale, and accurately position, support, and secure in place to achieve not less than minimum concrete coverage required for protection.
- B. Verify that anchors, seats, plates, reinforcement and other items to be cast into concrete are accurately placed, positioned securely, and will not interfere with concrete placement.

3.04 PLACING CONCRETE

- A. Place concrete in accordance with ACI 304R.
- B. Notify Architect not less than 24 hours prior to commencement of placement operations.
- C. Maintain records of concrete placement. Record date, location, quantity, air temperature, and test samples taken.
- D. Ensure reinforcement, inserts, and waterstops will not be disturbed during concrete placement.
- E. Place concrete continuously without construction (cold) joints wherever possible; where construction joints are necessary, before next placement prepare joint surface by removing laitance and exposing the sand and sound surface mortar, by sandblasting or high-pressure water jetting.

3.05 CONCRETE FINISHING

- A. Repair surface defects, including tie holes, immediately after removing formwork.
- B. Unexposed Form Finish: Rub down or chip off fins or other raised areas 1/4 inch or more in height.

3.06 CURING AND PROTECTION

- A. Comply with requirements of ACI 308R. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.
- B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.
 1. Normal concrete: Not less than 7 days.

3.07 DEFECTIVE CONCRETE

- A. Test Results: The testing agency shall report test results in writing to Architect and Contractor within 24 hours of test.
- B. Defective Concrete: Concrete not conforming to required lines, details, dimensions, tolerances or specified requirements.
- C. Repair or replacement of defective concrete will be determined by the Architect. The cost of additional testing shall be borne by Contractor when defective concrete is identified.
- D. Do not patch, fill, touch-up, repair, or replace exposed concrete except upon express direction of Architect for each individual area.

SECTION 04-0004
DIVISION 4 - MASONRY - NOT USED

SECTION 05-0001
DIVISION 5 - METALS

SECTION 05-3100

STEEL DECKING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Metal form deck.

1.02 REFERENCE STANDARDS

- A. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2015.
- B. ICC-ES AC43 - Acceptance Criteria for Steel Deck Roof and Floor Systems; ICC Evaluation Service, Inc.; 2010 (R2013).
- C. SDI (DM) - Publication No.31, Design Manual for Composite Decks, Form Decks, Roof Decks; Steel Deck Institute; 2007.

1.03 SUBMITTALS

- A. GC to review submittals and coordinate their terms into the overall project planning and execution.
- B. See Section 01-3000 - Administrative Requirements, for submittals procedures.
- C. Shop Drawings: Indicate deck plan, support locations, projections, openings, reinforcement, pertinent details, and accessories.
- D. Product Data: Provide deck profile characteristics, dimensions, structural properties, and finishes.
- E. Submit manufacturer's installation instructions.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Cut plastic wrap to encourage ventilation.
- B. Separate sheets and store deck on dry wood sleepers; slope for positive drainage.

PART 2 PRODUCTS

2.01 STEEL DECK

- A. All Deck Types: Select and design metal deck in accordance with SDI Design Manual.
 - 1. Calculate to structural working stress design and structural properties specified.
 - 2. Maximum Vertical Deflection of Floor Deck: 1/360 of span.
- B. Metal Form Deck: Ribbed sheet steel:
 - 1. Galvanized Steel Sheet: ASTM A653/A653M, Structural Steel (SS) Grade 33/230, with G90/Z275 galvanized coating.

2.02 ACCESSORY MATERIALS

- A. Mechanical Fasteners: Steel; hex washer head, self-drilling, self-tapping.
 - 1. Design Requirements for Sidelap Connections: Provide number and type of fasteners that comply with the applicable requirements of SDI design method for roof deck and floor deck applications and ICC-ES AC43.
- B. Flute Closures: Closed cell foam rubber, 1 inch thick; profiled to fit tight to the deck.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions prior to beginning work.

3.02 INSTALLATION

- A. Erect metal deck in accordance with SDI Design Manual and manufacturer's instructions. Align and level.
- B. On steel supports provide minimum 1-1/2 inch bearing.
- C. At mechanically fastened male/female side laps fasten at 24 inches on center maximum.
- D. Drive mechanical sidelap connectors completely through adjacent lapped sheets; positively engage adjacent sheets with minimum three-thread penetration.

- E. Close openings above walls and partitions perpendicular to deck flutes with single row of foam cell closures.
- F. Place metal cant strips in position and fusion weld.

END OF SECTION

SECTION 05-4000
COLD-FORMED METAL FRAMING

PART 1 GENERAL**1.01 SECTION INCLUDES**

- A. Formed steel stud interior wall framing.
- B. Exterior wall sheathing.
- C. Formed steel joist and purlin framing and bridging.

1.02 REFERENCE STANDARDS

- A. AISI S100-12 - North American Specification for the Design of Cold-Formed Steel Structural Members; American Iron and Steel Institute; 2012.
- B. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2009.
- C. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2015.
- D. ASTM C955 - Standard Specification for Load-Bearing (Transverse and Axial) Steel Studs, Runners (Tracks), and Bracing or Bridging for Screw Application of Gypsum Panel Products and Metal Plaster Bases; 2011c.
- E. ASTM C1007 - Standard Specification for Installation of Load Bearing (Transverse and Axial) Steel Studs and Related Accessories; 2011a.
- F. ASTM C1396/C1396M - Standard Specification for Gypsum Board; 2014.
- G. SSPC-Paint 20 - Zinc-Rich Primers (Type I, "Inorganic," and Type II, "Organic"); Society for Protective Coatings; 2002 (Ed. 2004).

1.03 SUBMITTALS

- A. See Section 01-3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on standard framing members; describe materials and finish, product criteria, limitations .
- C. Product Data: Provide manufacturer's data on factory-made framing connectors, showing compliance with requirements.
- D. Shop Drawings: Indicate component details, bearing, anchorage, and type and location of fasteners, and accessories or items required of related work.
 1. Indicate stud and ceiling joist layout.
 2. Describe method for securing studs to tracks and for bolted framing connections.
- E. Manufacturer's Installation Instructions: Indicate special procedures, conditions requiring special attention, and _____.

PART 2 PRODUCTS**2.01 MANUFACTURERS**

- A. Metal Framing:
 1. Clarkwestern Dietrich Building Systems LLC; _____: www.clarkdietrich.com.
 2. Marino; _____: www.marinoware.com.
 3. Substitutions: See Section 01-6000 - Product Requirements.
- B. Framing Connectors and Accessories:
 1. Same manufacturer as metal framing.

2.02 FRAMING SYSTEM

- A. Provide primary and secondary framing members, bridging, bracing, plates, gussets, clips, fittings, reinforcement, and fastenings as required to provide a complete framing system.
- B. Design Criteria: Provide completed framing system having the following characteristics:
 1. Design: Calculate structural characteristics of cold-formed steel framing members according to AISI S100-12.

2. Structural Performance: Design, engineer, fabricate, and erect to withstand specified design loads for project conditions within required limits.
3. Design Loads: As follows:
 - a. Floor Live Loads:
 - 1) Minimum Uniformly Distributed: 50 psf.
 - 2) Minimum Concentrated: 1,000 lbs.
 4. Live load deflection meeting the following, unless otherwise indicated:
 - a. Floors: Maximum vertical deflection under live load of 1/360 of span.
 5. Able to tolerate movement of components without damage, failure of joint seals, undue stress on fasteners, or other detrimental effects when subject to seasonal or cyclic day/night temperature ranges.
 6. Able to accommodate construction tolerances, deflection of building structural members, and clearances of intended openings.

2.03 FRAMING MATERIALS

- A. Studs and Track: ASTM C955; studs formed to channel, "C", or "Sigma" shape with punched web; U-shaped track in matching nominal width and compatible height.
 1. Gage and Depth: As required to meet specified performance levels.
- B. Joists and Purlins: Fabricated from ASTM A653/A653M steel sheet, with G90/Z275 hot dipped galvanized coating.
 1. Gage and Depth: As required to meet specified performance levels.
- C. Framing Connectors: Factory-made, formed steel sheet.
 1. Material: ASTM A653/A653M SS Grade 33 and 40 (minimum), with G90/Z275 hot dipped galvanized coating for base metal thickness less than 10 gage, 0.1345 inch, and factory punched holes and slots.
 2. Structural Performance: Maintain load and movement capacity required by applicable code, when evaluated in accordance with AISI S100-12.
 3. Fixed Connections: Provide non-movement connections for tie-down to foundation, floor-to-floor tie-down, roof-to-wall tie-down, joist hangers, gusset plates, and stiffeners.

2.04 WALL SHEATHING

- A. Wall Sheathing: Gypsum; complying with requirements of ASTM C1396/C1396M for gypsum sheathing, square long edges, 5/8 inch.

2.05 ACCESSORIES

- A. Bracing, Furring, Bridging: Formed sheet steel, thickness determined for conditions encountered; finish to match framing components.
- B. Touch-Up Primer for Galvanized Surfaces: SSPC-Paint 20, Type I - Inorganic, complying with VOC limitations of authorities having jurisdiction.

2.06 FASTENERS

- A. Self-Drilling, Self-Tapping Screws, Bolts, Nuts and Washers: Hot dip galvanized per ASTM A153/A153M.
- B. Anchorage Devices: Powder actuated.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that substrate surfaces are ready to receive work.
- B. Verify field measurements and adjust installation as required.

3.02 INSTALLATION OF STUDS

- A. Install components in accordance with manufacturers' instructions and ASTM C1007 requirements.
- B. Align floor and ceiling tracks; locate to partition layout. Secure in place with fasteners at maximum 6 inches on center.
- C. Place studs at 16 inches on center; not more than 2 inches from abutting walls and at each side of openings. Connect studs to tracks using clip and tie method.

- D. Construct corners using minimum of three studs. Install double studs at wall openings, door and window jambs.
- E. Install load bearing studs full length in one piece. Splicing of studs is not permitted.
- F. Coordinate placement of insulation in multiple stud spaces made inaccessible after erection.
- G. Install intermediate studs above and below openings to align with wall stud spacing.
- H. Provide deflection allowance in stud track, directly below horizontal building framing at non-load bearing framing.
- I. Attach cross studs to studs for attachment of fixtures anchored to walls.
- J. Touch-up field welds and damaged galvanized surfaces with primer.

3.03 INSTALLATION OF JOISTS AND PURLINS

- A. Install framing components in accordance with manufacturer's instructions.
- B. Make provisions for erection stresses. Provide temporary alignment and bracing.
- C. Place joists at 16 inches on center; not more than 2 inches from abutting walls. Connect joists to supports using fastener method.
- D. Set ceiling joists parallel and level, with lateral bracing and bridging.
- E. Locate joist end bearing directly over load bearing studs or provide load distributing member to top of stud track.
- F. Provide web stiffeners at reaction points.
- G. Touch-up field welds and damaged galvanized surfaces with primer.

3.04 WALL SHEATHING

- A. Wall Sheathing: Secure with long dimension parallel to wall studs, with ends over firm bearing and staggered, using self-tapping screws.

END OF SECTION

SECTION 06-0001
DIVISION 6 - WOOD, PLASTICS AND COMPOSITES
NOT USED

SECTION 07-0001
DIVISION 7 - THERMAL & MOISTURE PROTECTION

SECTION 07-2500
WEATHER BARRIERS

PART 1 GENERAL**1.01 SECTION INCLUDES**

- A. Water-Resistive Barrier: Under exterior wall cladding, over sheathing or other substrate; not air tight or vapor retardant.
- B. Air Barriers: Materials that form a system to stop passage of air through exterior walls, joints between exterior walls and roof, joints around frames of openings in exterior walls, and ____.

1.02 DEFINITIONS

- A. Weather Barrier: Assemblies that form either water-resistive barriers, air barriers, or vapor retarders.
- B. Water-Resistive Barrier: Water-shedding barrier made of material that is moisture resistant, to the degree specified, intended to be installed to shed water without sealed seams.

1.03 REFERENCE STANDARDS

- A. ICC-ES AC38 - Acceptance Criteria for Water-Resistive Barriers; ICC Evaluation Service, Inc.; 2013.

1.04 SUBMITTALS

- A. See Section 01-3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on material characteristics.
- C. Manufacturer's Installation Instructions: Indicate preparation.

PART 2 PRODUCTS**2.01 WEATHER BARRIER ASSEMBLIES**

- A. Water-Resistive Barrier: Provide on exterior walls under exterior cladding.
 - 1. Use building paper or plastic sheet unless otherwise indicated.

2.02 WATER-RESISTIVE BARRIER MATERIALS (NEITHER AIR BARRIER NOR VAPOR RETARDER)

- A. Building Paper: Asphalt-saturated Kraft building paper complying with requirements of ICC-ES AC38 Grade D.
- B. Plastic Sheet: Polymeric-based sheet complying with requirements of ICC-ES AC38 Grade D with 60-minute water-resistance; do not use polyethylene sheet.

2.03 ACCESSORIES

- A. Sealants, Tapes, and Accessories for Sealing Weather Barrier and Sealing Weather Barrier to Adjacent Substrates: As specified or as recommended by weather barrier manufacturer.

PART 3 EXECUTION**3.01 EXAMINATION**

- A. Verify that surfaces and conditions are ready to accept the work of this section.

3.02 PREPARATION

- A. Remove projections, protruding fasteners, and loose or foreign matter that might interfere with proper installation.

3.03 INSTALLATION

- A. Install materials in accordance with manufacturer's instructions.
- B. Water-Resistive Barriers: Install continuous barrier over surfaces indicated, with sheets lapped to shed water but with seams not sealed.
- C. Mechanically Fastened Sheets - On Exterior:
 - 1. Install sheets shingle-fashion to shed water, with seams generally horizontal.
 - 2. Overlap seams as recommended by manufacturer but at least 6 inches.
 - 3. Where stud framing rests on concrete or masonry, extend lower edge of sheet at least 4 inches below bottom of framing and seal to foundation with sealant.
 - 4. Install water-resistive barrier over jamb flashings.

5. At openings to be filled with frames having nailing flanges, wrap excess sheet into opening; at head, seal sheet over flange and flashing.
- D. Openings and Penetrations in Exterior Weather Barriers:
 1. Install flashing over sills, covering entire sill frame member, extending at least 5 inches onto weather barrier and at least 6 inches up jambs; mechanically fasten stretched edges.
 2. At openings to be filled with frames having nailing flanges, seal head and jamb flanges using a continuous bead of sealant compressed by flange and cover flanges with at least 4 inches wide; do not seal sill flange.
 3. At openings to be filled with non-flanged frames, seal weather barrier to all sides of opening framing, using flashing at least 9 inches wide, covering entire depth of framing.
 4. At head of openings, install flashing under weather barrier extending at least 2 inches beyond face of jambs; seal weather barrier to flashing.
 5. At interior face of openings, seal gap between window/door frame and rough framing, using joint sealant over backer rod.
 6. Service and Other Penetrations: Form flashing around penetrating item and seal to weather barrier surface.

3.04 FIELD QUALITY CONTROL

- A. Do not cover installed weather barriers until required inspections have been completed.
- B. Take digital photographs of each portion of the installation prior to covering up.

3.05 PROTECTION

- A. Do not leave materials exposed to weather longer than recommended by manufacturer.
- B. Do not leave paper- or felt-based barriers exposed to weather for longer than one week.

END OF SECTION

SECTION 07-4213
METAL WALL PANELS

PART 1 GENERAL**1.01 SECTION INCLUDES**

- A. Manufactured metal panels for walls, with related flashings and accessory components.

1.02 REFERENCE STANDARDS

- A. ASCE 7 - Minimum Design Loads for Buildings and Other Structures; 2011.
- B. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2015.
- C. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing; 2012.

1.03 SUBMITTALS

- A. Shop Drawings: Indicate dimensions, layout, joints, construction details, methods of anchorage.
- B. Samples: Submit two samples of wall panel and soffit panel, 12 inch by 12 inch in size illustrating finish color, sheen, and texture.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Protect panels from accelerated weathering by removing or venting sheet plastic shipping wrap.
- B. Store prefinished material off ground and protected from weather. Prevent twisting, bending, or abrasion, and provide ventilation to stored materials. Slope metal sheets to ensure drainage.
- C. Prevent contact with materials that may cause discoloration or staining of products.

1.05 WARRANTY

- A. See Section 01-7800 - Closeout Submittals, for additional warranty requirements.

PART 2 PRODUCTS**2.01 MANUFACTURED METAL PANELS**

- A. Wall Panel System: Factory fabricated prefinished metal panel system, site assembled.
 1. Provide exterior panels and subgirt framing assembly.
 2. Design and size components to withstand dead and live loads caused by positive and negative wind pressure acting normal to plane of wall.
 3. Design Pressure: In accordance with applicable codes.
 4. Maximum Allowable Deflection of Panel: 1/90 of span.
 5. Movement: Accommodate movement within system without damage to components or deterioration of seals, movement within system; movement between system and perimeter components when subject to seasonal temperature cycling; dynamic loading and release of loads; and deflection of structural support framing.
 6. Drainage: Provide positive drainage to exterior for moisture entering or condensation occurring within panel system.
 7. Fabrication: Formed true to shape, accurate in size, square, and free from distortion or defects; pieces of longest practical lengths.
 8. Exterior Finish: Panel manufacturer's standard polyvinylidene fluoride (PVDF) coating, top coat over epoxy primer.
- B. Exterior Panels:
 1. Profile: Vertical; match existing to remain.
 2. Side Seams: Double-interlocked, tight-fitting, sealed with continuous bead of sealant.
 3. Material: Precoated steel sheet, 20 gage, 0.0359 inch minimum thickness.
 4. Color: to be selected from manufacturer's standard colors.
- C. Expansion Joints: Same material, thickness and finish as exterior sheets; ____ gage, ____ inch thick; manufacturer's standard brake formed type, of profile to suit system.
- D. Trim: Same material, thickness and finish as exterior sheets; brake formed to required profiles.
- E. Anchors: Galvanized steel.

2.02 MATERIALS

- A. Precoated Steel Sheet: Hot-dipped galvanized steel sheet, ASTM A653/A653M, with G90/Z275 coating; continuous coil-coated on exposed surfaces with specified finish coating and on panel back with specified panel back coating.

2.03 ACCESSORIES

- A. Sealants:
 - 1. Exposed Sealant: Elastomeric; silicone, polyurethane, or silyl-terminated polyether/polyurethane.
 - 2. Concealed Sealant: Non-curing butyl sealant or tape sealant.
- B. Fasteners: Manufacturer's standard type to suit application; with soft neoprene washers, steel, hot dip galvanized. Fastener cap same color as exterior panel.
 - 1. Metal-to-Metal Fasteners: Self-drilling, self-tapping screws.
- C. Field Touch-up Paint: As recommended by panel manufacturer.
- D. Bituminous Paint: Asphalt base.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that building framing members are ready to receive panels.

3.02 PREPARATION

- A. Ensure existing and new subgirt construction is ready to receive new metal panels.

3.03 INSTALLATION

- A. Install panels on walls in accordance with manufacturer's instructions.
- B. Protect surfaces in contact with cementitious materials and dissimilar metals with bituminous paint. Allow to dry prior to installation.
- C. Fasten panels to structural supports; aligned, level, and plumb.
- D. Locate joints over supports. Lap panel ends minimum 2 inches.
- E. Seal and place gaskets to prevent weather penetration. Maintain neat appearance.

3.04 TOLERANCES

- A. Maximum Offset From True Alignment Between Adjacent Members Butting or In Line: 1/16 inch.
- B. Maximum Variation from Plane or Location Indicated on Drawings: 1/4 inch.

3.05 CLEANING

- A. Remove site cuttings from finish surfaces.
- B. Clean and wash prefinished surfaces with mild soap and water; rinse with clean water.

END OF SECTION

SECTION 08-0001
DIVISION 8 - OPENINGS

SECTION 08-1113
HOLLOW METAL DOORS AND FRAMES

PART 1 GENERAL**1.01 SECTION INCLUDES**

- A. Non-fire-rated hollow metal doors and frames.
- B. Hollow metal frames for wood doors.
- C. Thermally insulated hollow metal doors with frames.

1.02 REFERENCE STANDARDS

- A. ADA Standards - Americans with Disabilities Act (ADA) Standards for Accessible Design; 2010.
- B. ANSI/ICC A117.1 - American National Standard for Accessible and Usable Buildings and Facilities; International Code Council; 2009.
- C. ANSI/SDI A250.4 - Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors, Frames and Frame Anchors; 2011.
- D. ANSI/SDI A250.8 - Specifications for Standard Steel Doors and Frames (SDI-100); 2014.
- E. ANSI/SDI A250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames; 2011.
- F. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2015.
- G. ASTM A1008/A1008M - Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength, Low Alloy, and High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable; 2015.
- H. ASTM A1011/A1011M - Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength; 2014.
- I. BHMA A156.115 - American National Standard for Hardware Preparation in Steel Doors and Steel Frames; 2014 (ANSI/BHMA A156.115).
- J. ICC A117.1 - Accessible and Usable Buildings and Facilities; International Code Council; 2009 (ANSI).
- K. NAAMM HMMA 805 - Recommended Selection and Usage Guide for Hollow Metal Doors and Frames; 2012.
- L. NAAMM HMMA 830 - Hardware Selection for Hollow Metal Doors and Frames; 2002.
- M. NAAMM HMMA 831 - Hardware Locations for Hollow Metal Doors and Frames; 2011.
- N. NAAMM HMMA 840 - Guide Specifications for Installation and Storage of Hollow Metal Doors and Frames; 2007.
- O. NAAMM HMMA 860 - Guide Specifications for Hollow Metal Doors and Frames; 2013.

1.03 SUBMITTALS

- A. See Section 01-3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Materials and details of design and construction, hardware locations, reinforcement type and locations, anchorage and fastening methods, and finishes.
- C. Shop Drawings: Details of each opening, showing elevations, glazing, frame profiles, and any indicated finish requirements.
- D. Manufacturer's Certificate: Certification that products meet or exceed specified requirements.

1.04 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
- B. Copies of Documents at Project Site: Maintain at the project site a copy of each referenced document that prescribes installation requirements.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Comply with NAAMM HMMA 840 or ANSI/SDI A250.8 (SDI-100) in accordance with specified requirements.
- B. Protect with resilient packaging; avoid humidity build-up under coverings; prevent corrosion and adverse effects on factory applied painted finish.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Hollow Metal Doors and Frames:
 1. Ceco Door; _____, an Assa Abloy Group company: www.assaabloydss.com.
 2. Republic Doors; _____: www.republicdoor.com.
 3. Steelcraft; _____, an Allegion brand: www.allegion.com/us.
 4. Substitutions: See Section 01-6000 - Product Requirements.

2.02 DESIGN CRITERIA

- A. Requirements for Hollow Metal Doors and Frames:
 1. Steel used for fabrication of doors and frames shall comply with one or more of the following requirements; Galvannealed steel conforming to ASTM A653/A653M, cold-rolled steel conforming to ASTM A1008/A1008M, or hot-rolled pickled and oiled (HRPO) steel conforming to ASTM A1011/A1011M, Commercial Steel (CS) Type B for each.
 2. Accessibility: Comply with ICC A117.1 and ADA Standards.
 3. Exterior Door Top Closures: Flush end closure channel, with top and door faces aligned.
 4. Door Edge Profile: Manufacturers standard for application indicated.
 5. Typical Door Face Sheets: Flush.
 6. Hardware Preparations, Selections and Locations: Comply with NAAMM HMMA 830 and NAAMM HMMA 831 or BHMA A156.115 and ANSI/SDI A250.8 (SDI-100) in accordance with specified requirements.
 7. Zinc Coating for Typical Interior and/or Exterior Locations: Provide metal components zinc-coated (galvanized) and/or zinc-iron alloy-coated (galvannealed) by the hot-dip process in accordance with ASTM A653/A653M, with manufacturer's standard coating thickness, unless noted otherwise for specific hollow metal doors and frames.
 - a. Based on NAAMM HMMA Custom Guidelines: Provide at least A25/ZF75 (galvannealed) for interior applications, and at least A60/ZF180 (galvannealed) or G60/Z180 (galvanized) for corrosive locations.

2.03 HOLLOW METAL DOORS

- A. Exterior Doors: Thermally insulated.
 1. Based on NAAMM HMMA Custom Guidelines:
 - a. Comply with guidelines of NAAMM HMMA 860 for Hollow Metal Doors and Frames.
 - b. Performance Level 3 - Heavy Duty, in accordance with NAAMM HMMA 805.
 - c. Physical Performance Level C, 250,000 cycles; in accordance with ANSI/SDI A250.4.
 - d. Door Face Metal Thickness: 20 gage, 0.032 inch, minimum.
 2. Core Material: Vertical steel stiffeners with fiberglass batts.
 3. Door Thickness: 1-3/4 inch, nominal.
 4. Weatherstripping: Refer to Section 08-7100.
- B. Interior Doors, Non-Fire Rated:
 1. Based on NAAMM HMMA Custom Guidelines:
 - a. Comply with guidelines of NAAMM HMMA 860 for Hollow Metal Doors and Frames.
 - b. Performance Level 3 - Heavy Duty, in accordance with NAAMM HMMA 805.
 - c. Physical Performance Level C, 250,000 cycles; in accordance with ANSI/SDI A250.4.
 - d. Door Face Metal Thickness: 20 gage, 0.032 inch, minimum.
 2. Core Material: Manufacturers standard core material/construction and in compliance with requirements.
 3. Door Thickness: 1-3/4 inch, nominal.

2.04 HOLLOW METAL FRAMES

- A. Comply with standards and/or custom guidelines as indicated for corresponding door in accordance with applicable door frame requirements.
- B. Exterior Door Frames: Full profile/continuously welded type.
 - 1. Galvanizing: Components hot-dipped zinc-iron alloy-coated (galvannealed) in accordance with ASTM A653/A653M, with A40/ZF120 coating.
 - 2. Frame Metal Thickness: 18 gage, 0.042 inch, minimum.
 - 3. Frame Finish: Factory primed and field finished.
 - 4. Weatherstripping: Integral, recessed into door edge or frame.
- C. Interior Door Frames, Non-Fire Rated: Full profile/continuously welded type.
- D. Frames for Wood Doors: Comply with frame requirements in accordance with corresponding door.

2.05 ACCESSORIES

- A. Silencers: Resilient rubber, fitted into drilled hole; 3 on strike side of single door, 3 on center mullion of pairs, and 2 on head of pairs without center mullions.
- B. Temporary Frame Spreaders: Provide for factory- or shop-assembled frames.

2.06 FINISHES

- A. Primer: Rust-inhibiting, complying with ANSI/SDI A250.10, door manufacturer's standard.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install doors and frames in accordance with manufacturer's instructions and related requirements of specified door and frame standards or custom guidelines indicated.
- B. Coordinate frame anchor placement with wall construction.
- C. Coordinate installation of hardware.

3.02 TOLERANCES

- A. Maximum Diagonal Distortion: 1/16 in measured with straight edge, corner to corner.

3.03 ADJUSTING

- A. Adjust for smooth and balanced door movement.

END OF SECTION

SECTION 08-1416
FLUSH WOOD DOORS

PART 1 GENERAL**1.01 REFERENCE STANDARDS**

- A. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards; 2014.

1.02 SUBMITTALS

- A. See Section 01-3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Indicate door core materials and construction; veneer species, type and characteristics.
- C. Shop Drawings: Show doors and frames, elevations, sizes, types, swings, undercuts, beveling, blocking for hardware, factory machining, factory finishing, cutouts for glazing and other details.
- D. Specimen warranty.
- E. Samples: Submit two samples of door construction, 6 x 6 inch in size cut from top corner of door.
- F. Samples: Submit two samples of door veneer, 6 x 6 inch in size illustrating wood grain, stain color, and sheen.
- G. Manufacturer's Installation Instructions: Indicate special installation instructions.
- H. Warranty, executed in Owner's name.

1.03 QUALITY ASSURANCE

- A. Maintain one copy of the specified door quality standard on site for review during installation and finishing.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Package, deliver and store doors in accordance with specified quality standard.
- B. Accept doors on site in manufacturer's packaging. Inspect for damage.
- C. Protect doors with resilient packaging sealed with heat shrunk plastic. Do not store in damp or wet areas; or in areas where sunlight might bleach veneer. Seal top and bottom edges with tinted sealer if stored more than one week. Break seal on site to permit ventilation.

1.05 WARRANTY

- A. See Section 01-7800 - Closeout Submittals, for additional warranty requirements.
- B. Interior Doors: Provide manufacturer's warranty for the life of the installation.
- C. Include coverage for delamination of veneer, warping beyond specified installation tolerances, defective materials, and telegraphing core construction.

PART 2 PRODUCTS**2.01 MANUFACTURERS**

- A. Wood Veneer Faced Doors:
 - 1. Graham Wood Doors; ____: www.grahamdoors.com.
 - 2. Eggers Industries; ____: www.eggersindustries.com.
 - 3. Marshfield DoorSystems, Inc; ____: www.marshfielddoors.com.
 - 4. Substitutions: See Section 01-6000 - Product Requirements.

2.02 DOORS

- A. All Doors: See drawings for locations and additional requirements.
 - 1. Quality Level: Custom Grade, Heavy Duty performance, in accordance with AWI/AWMAC/WI (AWS).
 - 2. Wood Veneer Faced Doors: 5-ply unless otherwise indicated.
- B. Interior Doors: 1-3/4 inches thick unless otherwise indicated; flush construction.
 - 1. Provide solid core doors at all locations.
 - 2. Wood veneer facing for field transparent finish .

2.03 DOOR AND PANEL CORES

- A. Non-Rated Solid Core and 20 Minute Rated Doors: Type particleboard core (PC), plies and faces as indicated.

2.04 DOOR FACINGS

- A. Veneer Facing for Transparent Finish: Red oak, veneer grade in accordance with quality standard indicated, plain sliced (flat cut), with book match between leaves of veneer, running match of spliced veneer leaves assembled on door or panel face.
- 1. Vertical Edges: Same species as face veneer.

2.05 DOOR CONSTRUCTION

- A. Fabricate doors in accordance with door quality standard specified.
- B. Cores Constructed with stiles and rails:
 - 1. Provide solid blocks at lock edge for hardware reinforcement.
 - 2. Provide solid blocking for other throughbolted hardware.
- C. Factory machine doors for hardware other than surface-mounted hardware, in accordance with hardware requirements and dimensions.
- D. Factory fit doors for frame opening dimensions identified on shop drawings, with edge clearances in accordance with specified quality standard.
 - 1. Exception: Doors to be field finished.
- E. Provide edge clearances in accordance with the quality standard specified.

2.06 FACTORY FINISHING - WOOD VENEER DOORS

- A. Finish work in accordance with AWI/AWMAC/WI (AWS), Section 5 - Finishing for grade specified and as follows:
- B. Seal door top edge with color sealer to match door facing.

PART 3 EXECUTION**3.01 EXAMINATION**

- A. Verify existing conditions before starting work.
- B. Verify that opening sizes and tolerances are acceptable.
- C. Do not install doors in frame openings that are not plumb or are out-of-tolerance for size or alignment.

3.02 INSTALLATION

- A. Install doors in accordance with manufacturer's instructions and specified quality standard.
- B. Factory-Finished Doors: Do not field cut or trim; if fit or clearance is not correct, replace door.
- C. Use machine tools to cut or drill for hardware.
- D. Coordinate installation of doors with installation of frames and hardware.

3.03 SCHEDULE - SEE DRAWINGS

END OF SECTION

SECTION 08-3100
ACCESS DOORS AND PANELS

PART 1 GENERAL**1.01 SECTION INCLUDES****1.02 REFERENCE STANDARDS**

- A. ITS (DIR) - Directory of Listed Products; Intertek Testing Services NA, Inc.; current edition.
- B. UL (FRD) - Fire Resistance Directory; Underwriters Laboratories Inc.; current edition.

1.03 SUBMITTALS

- A. See Section 01-3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide sizes, types, finishes, hardware, scheduled locations, and details of adjoining work.
- C. Shop Drawings: Indicate exact position of all access door units.

PART 2 PRODUCTS**2.01 ACCESS DOOR AND PANEL APPLICATIONS**

- A. Walls, Unless Otherwise Indicated:
 - 1. Material: Steel.
 - 2. Size: 12 by 12 inch, unless otherwise indicated.
 - 3. Standard duty, hinged door.
 - 4. Tool-operated spring or cam lock; no handle.
 - 5. In All Wall Types: Surface mounted face frame and door surface flush with frame surface.
 - 6. In Gypsum Board: Drywall bead frame with door surface flush with wall surface.
- B. Ceilings, Unless Otherwise Indicated: Same type as for walls.
 - 1. Size in Other Ceilings: 12 by 12 inch, unless otherwise indicated.
 - 2. Standard duty, hinged door.
 - 3. Tool-operated spring or cam lock; no handle.

2.02 WALL AND CEILING UNITS

- A. Manufacturers:
 - 1. ACUDOR Products Inc: www.acudor.com.
 - 2. Babcock-Davis: www.babcockdavis.com.
 - 3. Karp Associates, Inc; ____: www.karpinc.com.
 - 4. Milcor by Commercial Products Group of Hart & Cooley, Inc; ____: www.milcorinc.com.
- B. Access Doors: Factory fabricated door and frame units, fully assembled units with corner joints welded, filled, and ground flush; square and without rack or warp; coordinate requirements with assemblies that units are to be installed in.
 - 1. Door Style: Single thickness with rolled or turned in edges.
 - 2. Frames: 16 gage, 0.0598 inch, minimum.
 - 3. Single Thickness Steel Door Panels: 1/16 inch, minimum.
 - 4. Hardware:
 - a. Hinges for Non-Fire-Rated Units: Continuous piano hinge.
 - b. Latch/Lock: Screw driver slot for quarter turn cam latch.

PART 3 EXECUTION**3.01 EXAMINATION**

- A. Verify that rough openings are correctly sized and located.

3.02 INSTALLATION

- A. Install units in accordance with manufacturer's instructions.
- B. Install frames plumb and level in openings. Secure rigidly in place.
- C. Position units to provide convenient access to the concealed work requiring access.

END OF SECTION

SECTION 08-5113
ALUMINUM WINDOWS

PART 1 GENERAL**1.01 SECTION INCLUDES**

- A. Extruded aluminum windows with fixed sash.
- B. Factory glazing.

1.02 REFERENCE STANDARDS

- A. AAMA/WDMA/CSA 101/I.S.2/A440 - North American Fenestration Standard/Specification for windows, doors, and skylights; American Architectural Manufacturers Association/Window and Door Manufacturers Association/Canadian Standards Association; 2011.
- B. AAMA CW-10 - Care and Handling of Architectural Aluminum From Shop to Site; 2015.
- C. AAMA 609 & 610 - Cleaning and Maintenance Guide for Architecturally Finished Aluminum (Combined Document); 2015.
- D. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum; 2012.
- E. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2013.
- F. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2013.
- G. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes [Metric]; 2013.
- H. ASTM E283 - Standard Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen; 2004 (Reapproved 2012).
- I. ASTM E331 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference; 2000 (Reapproved 2009).
- J. ASTM E1996 - Standard Specification for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Windborne Debris in Hurricanes; 2014.
- K. SSPC-Paint 20 - Zinc-Rich Primers (Type I, "Inorganic," and Type II, "Organic"); Society for Protective Coatings; 2002 (Ed. 2004).

1.03 SUBMITTALS

- A. See Section 01-3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide component dimensions.
- C. Shop Drawings: Indicate opening dimensions, elevations of different types, framed opening tolerances, method for achieving air and vapor barrier seal to adjacent construction, anchorage locations, _____, and installation requirements.
- D. Test Reports: Prior to submitting shop drawings or starting fabrication, submit test report(s) by independent testing agency showing compliance with performance requirements in excess of those prescribed by specified grade.
- E. Manufacturer's Installation Instructions: Include complete preparation, installation, and cleaning requirements.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Comply with requirements of AAMA CW-10.
- B. Protect finished surfaces with wrapping paper or strippable coating during installation. Do not use adhesive papers or sprayed coatings that bond to substrate when exposed to sunlight or weather.

1.05 FIELD CONDITIONS

- A. Do not install sealants when ambient temperature is less than 40 degrees F.
- B. Maintain this minimum temperature during and 24 hours after installation of sealants.

1.06 WARRANTY

- A. Correct defective Work within a five year period after the Date of Substantial Completion.
- B. Provide five year manufacturer warranty against failure of glass seal on insulating glass units, including interpane dusting or misting. Include provision for replacement of failed units.
- C. Provide five year manufacturer warranty against excessive degradation of exterior finish. Include provision for replacement of units with excessive fading, chalking, or flaking.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Aluminum Windows:
 - 1. EFCO, a Pella Company; _____: www.efcocorp.com.
 - 2. Manko Window Systems, Inc; _____: www.mankowindows.com.
 - 3. Wausau Window and Wall Systems; _____: www.wausauwindow.com.
 - 4. Substitutions: See Section 01-6000 - Product Requirements.

2.02 WINDOWS

- A. Aluminum Windows: Extruded aluminum frame and sash, factory fabricated, factory finished, with operating hardware, related flashings, and anchorage and attachment devices.
 - 1. Frame Depth: 4 inches.
 - 2. Fabrication: Joints and corners flush, hairline, and weatherproof, accurately fitted and secured; prepared to receive anchors; fasteners and attachments concealed from view; reinforced as required for operating hardware and imposed loads.
 - 3. Perimeter Clearance: Minimize space between framing members and adjacent construction while allowing expected movement.
 - 4. Movement: Accommodate movement between window and perimeter framing and deflection of lintel, without damage to components or deterioration of seals.
 - 5. System Internal Drainage: Drain to the exterior by means of a weep drainage network any water entering joints, condensation occurring in glazing channel, and migrating moisture occurring within system.
 - 6. Thermal Movement: Design to accommodate thermal movement caused by 180 degrees F surface temperature without buckling stress on glass, joint seal failure, damaging loads on structural elements, damaging loads on fasteners, reduction in performance or other detrimental effects.
- B. Performance Requirements: Provide products that comply with the following:
 - 1. Grade: AAMA/WDMA/CSA 101/I.S.2/A440 requirements for specific window type:
 - a. Performance Class (PC): CW.
 - 2. Design Pressure (DP): In accordance with applicable codes.
 - 3. Member Deflection: Limit member deflection to flexure limit of glass in any direction, with full recovery of glazing materials.
 - 4. Wind-Borne-Debris Resistance: Identical full-size glazed assembly without auxiliary protection, tested by independent agency in accordance with ASTM E1996 for Wind Zone 4 - Additional Protection for Large and Small Missile impact and pressure cycling at design wind pressure.
 - 5. Water Leakage: No uncontrolled leakage on interior face when tested in accordance with ASTM E331 at differential pressure of 12.11 psf.
 - 6. Air Leakage: Maximum of 0.1 cu ft/min sq ft per unit area of outside frame dimension, with 6.27 psf differential pressure when tested in accordance with ASTM E283.
- C. Fixed, Non-Operable Type:
 - 1. Construction: Thermally broken.
 - 2. Glazing: Double; clear; low-e.
 - 3. Exterior Finish: Class I natural anodized.
 - 4. Interior Finish: Class I natural anodized.

2.03 MATERIALS

- A. Extruded Aluminum: ASTM B221 (ASTM B221M), 6063 alloy, T6 temper.
- B. Concealed Steel Items: Profiled to suit mullion sections; galvanized in accordance with ASTM A123/A123M.

2.04 FINISHES

- A. Class I Natural Anodized Finish: AAMA 611 AA-M12C22A41 Clear anodic coating not less than 0.7 mils thick.
- B. Touch-Up Primer for Galvanized Steel Surfaces: SSPC-Paint 20, zinc rich.

PART 3 EXECUTION**3.01 EXAMINATION**

- A. Verify that wall openings and adjoining air and vapor seal materials are ready to receive aluminum windows.

3.02 INSTALLATION

- A. Install windows in accordance with manufacturer's instructions.
- B. Attach window frame and shims to perimeter opening to accommodate construction tolerances and other irregularities.
- C. Align window plumb and level, free of warp or twist. Maintain dimensional tolerances and alignment with adjacent work.
- D. Install sill and sill end angles.
- E. Provide thermal isolation where components penetrate or disrupt building insulation. Pack fibrous insulation in shim spaces at perimeter of assembly to maintain continuity of thermal barrier.

3.03 TOLERANCES

- A. Maximum Variation from Level or Plumb: 1/16 inches every 3 ft non-cumulative or 1/8 inches per 10 ft, whichever is less.

3.04 CLEANING

- A. Remove protective material from factory finished aluminum surfaces.
- B. Wash surfaces by method recommended and acceptable to window manufacturer; rinse and wipe surfaces clean.
- C. Upon completion of installation, thoroughly clean aluminum surfaces in accordance with AAMA 609 & 610.
- D. Remove excess glazing sealant by moderate use of mineral spirits or other solvent acceptable to sealant and window manufacturer.

END OF SECTION

SECTION 08-7100
DOOR HARDWARE

PART 1 GENERAL**1.01 SECTION INCLUDES**

- A. Hardware for wood and hollow metal doors.
- B. Thresholds.
- C. Weatherstripping, seals and door gaskets.

1.02 REFERENCE STANDARDS

- A. 36 CFR 1191 - Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities; Architectural Barriers Act (ABA) Accessibility Guidelines; current edition.
- B. ADA Standards - Americans with Disabilities Act (ADA) Standards for Accessible Design; 2010.
- C. BHMA A156.1 - American National Standard for Butts and Hinges; Builders Hardware Manufacturers Association, Inc.; 2013 (ANSI/BHMA A156.1).
- D. BHMA A156.2 - American National Standard for Bored and Preassembled Locks & Latches; Builders Hardware Manufacturers Association; 2011 (ANSI/BHMA A156.2).
- E. BHMA A156.7 - American National Standard for Template Hinge Dimensions; Builders Hardware Manufacturers Association; 2014 (ANSI/BHMA A156.7).
- F. BHMA A156.8 - American National Standard for Door Controls - Overhead Stops and Holders; Builders Hardware Manufacturers Association, Inc.; 2010 (ANSI/BHMA A156.8).
- G. BHMA A156.18 - American National Standard for Materials and Finishes; Builders Hardware Manufacturers Association, Inc.; 2012 (ANSI/BHMA A156.18).
- H. BHMA A156.21 - American National Standard for Thresholds; Builders Hardware Manufacturers Association; 2014 (ANSI/BHMA A156.21).
- I. BHMA A156.22 - American National Standard for Door Gasketing and Edge Seal Systems, Builders Hardware Manufacturers Association; 2012 (ANSI/BHMA A156.22).
- J. DHI (LOCS) - Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames; Door and Hardware Institute; 2004.
- K. DHI WDHS.3 - Recommended Locations for Architectural Hardware for Flush Wood Doors; Door and Hardware Institute; 1993; also in WDHS-1/WDHS-5 Series, 1996.
- L. ICC A117.1 - Accessible and Usable Buildings and Facilities; International Code Council; 2009 (ANSI).
- M. NFPA 101 - Life Safety Code; National Fire Protection Association; 2015.

1.03 ADMINISTRATIVE REQUIREMENTS

- A. Coordinate the manufacture, fabrication, and installation of products that door hardware will be installed upon.
- B. Furnish templates for door and frame preparation to manufacturers and fabricators of products requiring internal reinforcement for door hardware.
- C. Convey Owner's keying requirements to manufacturers.
- D. Conduct a review meeting with the Owner's representative and/or the Architect to confirm the selected functions for each opening. Conduct this review prior to preparing the Hardware Schedule for submittal.

1.04 SUBMITTALS

- A. See Section 01-3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Manufacturer's catalog literature for each type of hardware, marked to clearly show products to be furnished for this project.
- C. Samples: Prior to preparation of hardware schedule:
- D. Hardware Schedule: Detailed listing of each item of hardware to be installed on each door. Use door numbering scheme as included in the Contract Documents. Identify electrically operated items and include power requirements.

- E. Keying Schedule: Submit for approval of Owner.
- F. Project Record Documents: Record actual locations of concealed equipment, services, and conduit.
- G. Keys: Deliver with identifying tags to Owner by security shipment direct from hardware supplier.
- H. Warranty: Submit manufacturer's warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.
- I. Maintenance Materials and Tools: Furnish the following for Owner's use in maintenance of project.
 - 1. See Section 01-6000 - Product Requirements, for additional provisions.
 - 2. Extra Lock Cylinders: One for each master keyed group.
 - 3. Tools: One set of all special wrenches or tools applicable to each different or special hardware component, whether supplied by the hardware component manufacturer or not.

1.05 QUALITY ASSURANCE

- A. Hardware Supplier Qualifications: Company specializing in supplying commercial door hardware with five years of experience.

1.06 WARRANTY

- A. See Section 01-7800 - Closeout Submittals, for additional warranty requirements.
- B. Provide five year warranty for door closers and _____.

PART 2 PRODUCTS

2.01 DOOR HARDWARE - GENERAL

- A. Provide hardware specified or required to make doors fully functional, compliant with applicable codes, and secure to the extent indicated.
- B. Provide items of a single type of the same model by the same manufacturer.
- C. Provide products that comply with the following:
 - 1. Applicable provisions of federal, state, and local codes.
 - 2. Accessibility: ADA Standards and ICC A117.1.
 - 3. ANSI/ICC A117.1, American National Standard for Accessible and Usable Buildings and Facilities.
 - 4. Applicable provisions of NFPA 101, Life Safety Code.
- D. Finishes: Provide door hardware of the same finish unless otherwise indicated.
 - 1. Primary Finish: Satin chrome plated over nickel on brass or bronze, 626 (approx US26D).
 - 2. Finish Definitions: BHMA A156.18.

2.02 LOCKS AND LATCHES

- A. Locks: Provide a lock for every door, unless specifically indicated as not requiring locking.
 - 1. If no hardware set is indicated for a swinging door provide an office lockset.
 - 2. Trim: Provide lever handle or pull trim on outside of all locks unless specifically stated to have no outside trim.
 - 3. Lock Cylinders: Provide key access on outside of all locks unless specifically stated to have no locking or no outside trim.
 - 4. In door sections, where a lock cylinder referenced to this Section is specified, furnish and install a mortise lock cylinder keyed to the building keying system.
- B. Lock Cylinders: Manufacturer's standard tumbler type, six-pin standard core.
 - 1. Provide cams and/or tailpieces as required for locking devices required.
- C. Keying: Grand master keyed.
 - 1. Coordinate cylinders and keying with Owner to conform with existing system in use.
- D. Latches: Provide a latch for every door that is not required to lock, unless specifically indicated "push/pull" or "not required to latch".

2.03 HINGES

- A. Hinges: Provide hinges on every swinging door.
 - 1. Provide five-knuckle full mortise butt hinges unless otherwise indicated.
 - 2. Provide ball-bearing hinges at all doors.
 - 3. Provide hinges in the quantities indicated.

- 4. Provide non-removable pins on exterior outswinging doors.
- B. Butt Hinges: Comply with BHMA A156.1 and A156.7; standard weight, unless otherwise indicated.
 - 1. Provide hinge width required to clear surrounding trim.
- C. Quantity of Hinges Per Door:
 - 1. Doors From 60 inches High up to 90 inches High: Three hinges.
- D. Manufacturers - Hinges:
 - 1. Hager BB-1279, or equivalent by:
 - 2. Assa Abloy Brands; McKinney: www.assaabloydss.com.

2.04 CYLINDRICAL LOCKSETS

- A. Cylindrical Locksets - Basis of Design: Sargent 11 Line.
 - 1. Standard 'J' lever with 'L' rose for exterior doors
 - 2. Standard 'P' lever with 'B' rose for interior doors.
- B. Locking Functions: As defined in BHMA A156.2, and as follows.
 - 1. Passage: No locking, always free entry and exit.
 - 2. Privacy: F76, emergency tool unlocks.
 - 3. Office: F81, key not required to lock, remains locked upon exit.

2.05 CLOSERS

- A. Manufacturers - Surface Mounted Closers:
 - 1. Assa Abloy Brands; Sargent: www.assaabloydss.com.
 - a. 1431 Series Aluminum
 - b. with Hold-Open feature
 - c. with Positive Stop Feature
 - d. Or equivalent products by:
 - 1) DORMA USA, Inc.; _____: www.dorma.com.
 - 2) LCN, an Allegion brand: www.allegion.com/us.

2.06 STOPS AND HOLDERS

- A. Stops: Complying with BHMA A156.8; provide a stop for every swinging door, unless otherwise indicated.
 - 1. Provide wall stops, unless otherwise indicated.
 - 2. Stop is not required if positive stop feature is specified for door closer; positive stop feature of door closer is not an acceptable substitute for a stop unless specifically so stated.
- B. Wall and Floor Stops:
 - 1. Trimco; 1211 cast dome floor stops; 1271CP wall stops; or equivalent products by:
 - a. Hager
 - b. Rockwood
 - c. Ives

2.07 GASKETING AND THRESHOLDS

- A. Gaskets: Complying with BHMA A156.22.
 - 1. On each exterior door, provide weatherstripping gaskets, unless otherwise indicated; top, sides, and meeting stiles of pairs.
 - 2. On each exterior door, provide door bottom sweep, unless otherwise indicated.
- B. Thresholds: Complying with BHMA A156.21.
 - 1. At each exterior door, provide a threshold unless otherwise indicated.
 - 2. Conform to height limits imposed by ADA for changes in height.
 - 3. Field cut threshold to frame for tight fit.
- C. Fasteners At Exterior Locations: Non-corroding.
- D. Manufacturers - Gasketing and Thresholds:
 - 1. National Guard Products, Inc: www.ngpinc.com.
 - 2. Pemko Manufacturing Co: www.pemko.com.
 - 3. Zero International, Inc: www.zerointernational.com.

2.08 PROTECTION PLATES AND ARCHITECTURAL TRIM

- A. Protection Plates:
 - 1. Kickplate: Provide on push side of every door with closer, except aluminum storefront and glass entry doors.
- B. Drip Guard: Provide projecting drip guard over all exterior doors unless they are under a projecting roof or canopy.
- C. Manufacturers - Protection Plates and Architectural Trim:
 - 1. Hager Companies: www.hagerco.com.
 - 2. Hiawatha, Inc, division of Activar Construction Products Group, Inc: www.activarcpg.com/hiawatha.
 - 3. Trimco, originally called Triangle Brass Manufacturing Co., Inc: www.trimcohhardware.com.

2.09 FIRE DEPARTMENT LOCK BOX

- A. Fire Department Lock Box: Heavy-duty, surface mounted, solid stainless-steel box with hinged door and interior gasket seal; single drill resistant lock with dust covers and tamper alarm.
 - 1. Capacity: Holds 10 keys.
 - 2. Finish: Manufacturer's standard dark bronze.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that doors and frames are ready to receive work; labeled, fire-rated doors and frames are present and properly installed, and dimensions are as indicated on shop drawings.

3.02 INSTALLATION

- A. Install hardware in accordance with manufacturer's instructions and applicable codes.
- B. Use templates provided by hardware item manufacturer.
- C. Mounting heights for hardware from finished floor to center line of hardware item.
 - 1. For steel doors and frames: Comply with DHI "Recommended Locations for Architectural Hardware for Steel Doors and Frames."
 - 2. For Wood Doors: Comply with DHI "Recommended Locations for Architectural Hardware for Wood Flush Doors."
 - 3. For all doors, comply with ANSI/ADAAG guidelines for accessibility.
- D. Set exterior door thresholds with full-width bead of elastomeric sealant on each point of contact with floor providing a continuous weather seal; anchor thresholds with stainless steel countersunk screws.

3.03 ADJUSTING

- A. Adjust work under provisions of Section 01-7000.
- B. Adjust hardware for smooth operation.
- C. Adjust gasketing for complete, continuous seal; replace if unable to make complete seal.

3.04 CLEANING

- A. Clean adjacent surfaces soiled by hardware installation. Clean finished hardware per manufacturer's instructions after final adjustments has been made. Replace items that cannot be cleaned to manufacturer's level of finish quality at no additional cost.

3.05 PROTECTION

- A. Protect finished Work under provisions of Section 01-7000.
- B. Do not permit adjacent work to damage hardware or finish.

END OF SECTION

SECTION 09-0001
DIVISION 9 - FINISHES

SECTION 09-2116
GYPSUM BOARD ASSEMBLIES

PART 1 GENERAL**1.01 SECTION INCLUDES**

- A. Metal stud wall framing.
- B. Cementitious backing board.
- C. Gypsum wallboard.
- D. Joint treatment and accessories.

1.02 REFERENCE STANDARDS

- A. ANSI A108.11 - American National Standard for Interior Installation of Cementitious Backer Units; 2010 (Revised).
- B. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2015.
- C. ASTM C475/C475M - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board; 2012.
- D. ASTM C645 - Standard Specification for Nonstructural Steel Framing Members; 2014.
- E. ASTM C754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products; 2011.
- F. ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board; 2013.
- G. ASTM C954 - Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs From 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness; 2011.
- H. ASTM C1002 - Standard Specification for Steel Self-Piercing Tapping Screws for Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs; 2014.
- I. ASTM C1047 - Standard Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base; 2014a.
- J. ASTM C1288 - Standard Specification for Discrete Non-Asbestos Fiber-Cement Interior Substrate Sheets; 2014.
- K. ASTM C1396/C1396M - Standard Specification for Gypsum Board; 2014.
- L. ASTM D3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber; 2012.
- M. GA-216 - Application and Finishing of Gypsum Board; Gypsum Association; 2013.

1.03 SUBMITTALS

- A. See Section 01-3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on metal framing, gypsum board, accessories, and joint finishing system.
- C. Product Data: Provide manufacturer's data on partition head to structure connectors, showing compliance with requirements.

1.04 QUALITY ASSURANCE

- A. Installer Qualifications: Company specializing in performing gypsum board application and finishing, with minimum five years of documented experience.

PART 2 PRODUCTS**2.01 GYPSUM BOARD ASSEMBLIES**

- A. Provide completed assemblies complying with ASTM C840 and GA-216.
 - 1. See PART 3 for finishing requirements.

2.02 METAL FRAMING MATERIALS

- A. Manufacturers - Metal Framing, Connectors, and Accessories:

1. Clarkwestern Dietrich Building Systems LLC; ____: www.clarkdietrich.com.
2. Marino; ____: www.marinoware.com.
3. Phillips Manufacturing Company; ____: www.phillipsmfg.com.

B. Non-Loadbearing Framing System Components: ASTM C645; galvanized sheet steel, of size and properties necessary to comply with ASTM C754 for the spacing indicated, with maximum deflection of wall framing of L/240 at 5 psf.

1. Studs: "C" shaped with flat or formed webs with knurled faces.
2. Runners: U shaped, sized to match studs.

C. Loadbearing Studs for Application of Gypsum Board: As specified in Section 05-4000.

D. Partition Head to Structure Connections: Provide mechanical anchorage devices that accommodate deflection using slotted holes, screws and anti-friction bushings, preventing rotation of studs while maintaining structural performance of partition.

1. Structural Performance: Maintain lateral load resistance and vertical movement capacity required by applicable code, when evaluated in accordance with AISI SG02-1.
2. Material: ASTM A653/A653M steel sheet, SS Grade 50/340, with G60/Z180 hot dipped galvanized coating.

2.03 BOARD MATERIALS

A. Manufacturers - Gypsum-Based Board:

1. American Gypsum Company; ____: www.americangypsum.com.
2. CertainTeed Corporation; ____: www.certainteed.com.
3. Georgia-Pacific Gypsum; ____: www.gpgypsum.com.
4. Lafarge North America Inc: www.lafargenorthamerica.com.
5. National Gypsum Company; ____: www.nationalgypsum.com.
6. USG Corporation; ____: www.usg.com.

B. Gypsum Wallboard: Paper-faced gypsum panels as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.

1. Application: Use for vertical surfaces and ceilings, unless otherwise indicated.
2. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
 - a. Mold-resistant board is required whenever board is being installed before the building is enclosed and conditioned.
3. Thickness:
 - a. Vertical Surfaces: 5/8 inch.
 - b. Ceilings: 5/8 inch.

C. Backing Board For Wet Areas:

1. Application: Surfaces behind tile in wet areas including counter mounted kitchen sink.
2. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
3. ASTM Cement-Based Board: Non-gypsum-based, cementitious board complying with ASTM C1288.
 - a. Thickness: 1/2 inch.

2.04 ACCESSORIES

A. Finishing Accessories: ASTM C1047, galvanized steel or rolled zinc, unless noted otherwise.

1. Types: As detailed or required for finished appearance.
2. Special Shapes: In addition to conventional corner bead and control joints, provide U-bead and L-bead at exposed panel edges.
3. Products:
 - a. Same manufacturer as framing materials.

B. Joint Materials: ASTM C475 and as recommended by gypsum board manufacturer for project conditions.

1. Tape: 2 inch wide, creased paper tape for joints and corners.
2. Ready-mixed vinyl-based joint compound.

C. Screws for Fastening of Gypsum Panel Products to Cold-Formed Steel Studs Less than 0.033 inch in Thickness and Wood Members: ASTM C1002; self-piercing tapping screws, corrosion resistant.

- D. Screws for Fastening of Gypsum Panel Products to Steel Members from 0.033 to 0.112 inch in Thickness: ASTM C954; steel drill screws, corrosion resistant.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that project conditions are appropriate for work of this section to commence.

3.02 FRAMING INSTALLATION

- A. Metal Framing: Install in accordance with ASTM C754 and manufacturer's instructions.
- B. Studs: Space studs as permitted by standard.
 - 1. Extend partition framing to structure in all locations.
 - 2. Partitions Terminating at Structure: Attach top runner to structure, maintain clearance between top of studs and structure, and connect studs to track using specified mechanical devices in accordance with manufacturer's instructions; verify free movement of top of stud connections; do not leave studs unattached to track.
- C. Openings: Reinforce openings as required for weight of doors or operable panels, using not less than double studs at jambs.
- D. Blocking: Install mechanically fastened steel channel blocking for support of:
 - 1. Framed openings.
 - 2. Wall mounted cabinets.
 - 3. Wall mounted door hardware.

3.03 BOARD INSTALLATION

- A. Comply with ASTM C 840, GA-216, and manufacturer's instructions. Install to minimize butt end joints, especially in highly visible locations.
- B. Single-Layer Non-Rated: Install gypsum board parallel to framing, with ends and edges occurring over firm bearing.
- C. Cementitious Backing Board: Install over steel framing members and plywood substrate where indicated, in accordance with ANSI A108.11 and manufacturer's instructions.
- D. Installation on Metal Framing: Use screws for attachment of gypsum board.
- E. Moisture Protection: Treat cut edges and holes in moisture resistant gypsum board with sealant.

3.04 INSTALLATION OF TRIM AND ACCESSORIES

- A. Control Joints: Place control joints consistent with lines of building spaces and as follows:
 - 1. Not more than 30 feet apart on walls and ceilings over 50 feet long.
- B. Corner Beads: Install at external corners, using longest practical lengths.
- C. Edge Trim: Install at locations where gypsum board abuts dissimilar materials.

3.05 JOINT TREATMENT

- A. Paper Faced Gypsum Board: Use paper joint tape, bedded with ready-mixed vinyl-based joint compound and finished with ready-mixed vinyl-based joint compound.
- B. Finish gypsum board in accordance with levels defined in ASTM C840, as follows:
 - 1. Level 4: Walls and ceilings to receive paint finish or wall coverings, unless otherwise indicated.
 - 2. Level 2: In utility areas, behind cabinetry, and on backing board to receive tile finish.
 - 3. Level 1: Wall areas above finished ceilings, whether or not accessible in the completed construction.
- C. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
 - 1. Feather coats of joint compound so that camber is maximum 1/32 inch.
 - 2. Taping, filling, and sanding is not required at surfaces behind fixed cabinetry.
- D. Fill and finish joints and corners of cementitious backing board as recommended by manufacturer.

3.06 TOLERANCES

- A. Maximum Variation of Finished Gypsum Board Surface from True Flatness: 1/8 inch in 10 feet in any direction.

END OF SECTION

SECTION 09-5100
ACOUSTICAL CEILINGS

PART 1 GENERAL**1.01 SECTION INCLUDES**

- A. Suspended metal grid ceiling system.
- B. Acoustical units.

1.02 REFERENCE STANDARDS

- A. ASTM C635/C635M - Standard Specification for the Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings; 2013a.
- B. ASTM C636/C636M - Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels; 2013.
- C. ASTM E580/E580M - Standard Practice for Installation of Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels in Areas Subject to Earthquake Ground Motions; 2014.
- D. ASTM E1264 - Standard Classification for Acoustical Ceiling Products; 2014.

1.03 ADMINISTRATIVE REQUIREMENTS

- A. Sequence work to ensure acoustical ceilings are not installed until building is enclosed, sufficient heat is provided, dust generating activities have terminated, and overhead work is completed, tested, and approved.
- B. Do not install acoustical units until after interior wet work is dry.

1.04 SUBMITTALS

- A. See Section 01-3000 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Indicate grid layout and related dimensioning and mechanical and electrical items installed in the ceiling.
- C. Product Data: Provide data on suspension system components.
- D. Samples: Submit two samples ____ by ____ inch in size illustrating material and finish of acoustical units.
- E. Samples: Submit two samples each, ____ inches long, of suspension system main runner.
- F. Manufacturer's Installation Instructions: Indicate special procedures.
- G. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. See Section 01-6000 - Product Requirements, for additional provisions.
 - 2. Extra Acoustical Units: Quantity equal to 5 percent of total installed.

PART 2 PRODUCTS**2.01 ACOUSTICAL UNITS**

- A. Manufacturers:
 - 1. Armstrong World Industries, Inc: www.armstrong.com.
 - a. Cirrus Angled Tegular #535, white, 24" x 48". Use in field areas, where full tiles may be used.
 - b. Cirrus Square Edge #533, white, 24" x 48"; Use at edges where cut tiles are required.
 - 2. Substitutions: See Section 01-6000 - Product Requirements.
- B. Acoustical Units - General: ASTM E1264, Class A.

2.02 SUSPENSION SYSTEM(S)

- A. Manufacturers:
 - 1. Same as for acoustical units.
 - 2. Substitutions: See Section 01-6000 - Product Requirements.
- B. Suspension Systems - General: Complying with ASTM C635/C635M; die cut and interlocking components, with stabilizer bars, clips, splices, perimeter moldings, and hold down clips as required.
- C. Exposed Steel Suspension System: Formed steel, commercial quality cold rolled; heavy-duty.
 - 1. Profile: Tee; 15/16 inch wide face.

2. Finish: White.
3. Products:

2.03 ACCESSORIES

- A. Support Channels and Hangers: Galvanized steel; size and type to suit application, seismic requirements, and ceiling system flatness requirement specified.
- B. Perimeter Moldings: Same material and finish as grid.
 1. At Exposed Grid: Provide L-shaped molding for mounting at same elevation as face of grid.
- C. Touch-up Paint: Type and color to match acoustical and grid units.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify that layout of hangers will not interfere with other work.

3.02 INSTALLATION - SUSPENSION SYSTEM

- A. Install suspension system in accordance with ASTM C636/C636M, ASTM E580/E580M, and manufacturer's instructions and as supplemented in this section.
- B. Rigidly secure system, including integral mechanical and electrical components, for maximum deflection of 1:360.
- C. Lay out system as depicted in reflected ceiling plan. If changes are necessary, consult with Architect prior to beginning installation.
- D. Install after major above-ceiling work is complete. Coordinate the location of hangers with other work.
- E. Hang suspension system independent of walls, columns, ducts, pipes and conduit. Where carrying members are spliced, avoid visible displacement of face plane of adjacent members.
- F. Where ducts or other equipment prevent the regular spacing of hangers, reinforce the nearest affected hangers and related carrying channels to span the extra distance.
- G. Do not support components on main runners or cross runners if weight causes total dead load to exceed deflection capability.
- H. Support fixture loads using supplementary hangers located within 6 inches of each corner, or support components independently.
- I. Do not eccentrically load system or induce rotation of runners.
- J. Perimeter Molding: Install at intersection of ceiling and vertical surfaces and at junctions with other interruptions.
 1. Use longest practical lengths.
 2. Overlap and rivet corners.

3.03 INSTALLATION - ACOUSTICAL UNITS

- A. Install acoustical units in accordance with manufacturer's instructions.
- B. Fit acoustical units in place, free from damaged edges or other defects detrimental to appearance and function.
- C. Fit border trim neatly against abutting surfaces.
- D. Install units after above-ceiling work is complete.
- E. Install acoustical units level, in uniform plane, and free from twist, warp, and dents.
- F. Cutting Acoustical Units:
 1. Make field cut edges of same profile as factory edges.
- G. Where round obstructions occur, provide preformed closures to match perimeter molding.
- H. Install hold-down clips on panels within 20 ft of an exterior door.

3.04 TOLERANCES

- A. Maximum Variation from Flat and Level Surface: 1/8 inch in 10 feet.

B. Maximum Variation from Plumb of Grid Members Caused by Eccentric Loads: 2 degrees.

END OF SECTION

SECTION 09-6500
RESILIENT FLOORING

PART 1 GENERAL**1.01 SUPPLY AND INSTALL OF RESILIENT FLOOR TO BE UNDER SEPARATE CONTRACT. GC TO COOPERATE WITH THIS SUBCONTRACTOR.****1.02 SECTION INCLUDES**

- A. Resilient tile flooring.
- B. Resilient base.
- C. Installation accessories.

1.03 REFERENCE STANDARDS

- A. ASTM F710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring; 2011.
- B. ASTM F1066 - Standard Specification for Vinyl Composition Floor Tile; 2004 (Reapproved 2010)e1.
- C. ASTM F1861 - Standard Specification for Resilient Wall Base; 2008 (Reapproved 2012)e1.

1.04 SUBMITTALS

- A. See Section 01-3000 - Administrative Requirements, for submittal procedures.
- B. Selection Samples: Submit manufacturer's complete set of color samples for Architect's initial selection.
- C. Concrete Testing Standard: Submit a copy of ASTM F710.
- D. Certification: Prior to installation of flooring, submit written certification by flooring manufacturer and adhesive manufacturer that condition of sub-floor is acceptable.
- E. Maintenance Data: Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning, stripping, and re-waxing.
- F. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. See Section 01-6000 - Product Requirements, for additional provisions.
 - 2. Extra Flooring Material: 15 square feet of each type and color.
 - 3. Extra Wall Base: 12 linear feet of each type and color.

1.05 FIELD CONDITIONS

- A. Store materials for not less than 48 hours prior to installation in area of installation at a temperature of 70 degrees F to achieve temperature stability. Thereafter, maintain conditions above 55 degrees F.

PART 2 PRODUCTS**2.01 TILE FLOORING**

- A. Vinyl Composition Tile: Homogeneous, with color extending throughout thickness.
 - 1. Minimum Requirements: Comply with ASTM F1066, of Class corresponding to type specified.
 - 2. Size: 12 by 12 inch.
 - 3. Thickness: 0.125 inch.
 - 4. Pattern: Marbleized.
 - 5. Manufacturers:
 - a. Armstrong World Industries, Inc; _____: www.armstrong.com.
 - b. Johnsonite, a Tarkett Company; _____: www.johnsonite.com.
 - c. Substitutions: See Section 01-6000 - Product Requirements.

2.02 RESILIENT BASE

- A. Resilient Base: ASTM F1861, Type TS rubber, vulcanized thermoset; top set Style B, Cove.
 - 1. Height: 4 inch.
 - 2. Thickness: 0.125 inch thick.
 - 3. Finish: Satin.
 - 4. Color: Color as selected from manufacturer's standards.
 - 5. Accessories: Premolded external corners and end stops.
 - 6. Manufacturers:
 - a. Armstrong World Industries, Inc; [_____]: www.armstrong.com.

- b. Johnsonite, a Tarkett Company; _____: www.johnsonite.com.
- c. Roppe Corp; _____: www.roppe.com.
- d. _____.
- e. Substitutions: See Section 01-6000 - Product Requirements.

2.03 ACCESSORIES

- A. Subfloor Filler: White premix latex; type recommended by adhesive material manufacturer.
- B. Moldings, Transition and Edge Strips: Same material as flooring.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that surfaces are flat to tolerances acceptable to flooring manufacturer, free of cracks that might telegraph through flooring, clean, dry, and free of curing compounds, surface hardeners, and other chemicals that might interfere with bonding of flooring to substrate.
- B. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive resilient base.
- C. Cementitious Sub-floor Surfaces: Verify that substrates are dry enough and ready for resilient flooring installation by testing for moisture and pH.
 - 1. Test in accordance with ASTM F710.
 - 2. Obtain instructions if test results are not within limits recommended by resilient flooring manufacturer and adhesive materials manufacturer.
- D. Verify that required floor-mounted utilities are in correct location.

3.02 PREPARATION

- A. Prepare floor substrates as recommended by flooring and adhesive manufacturers.
- B. Remove sub-floor ridges and bumps. Fill minor low spots, cracks, joints, holes, and other defects with sub-floor filler to achieve smooth, flat, hard surface.
- C. Prohibit traffic until filler is cured.
- D. Clean substrate.
- E. Apply primer as required to prevent "bleed-through" or interference with adhesion by substances that cannot be removed.

3.03 INSTALLATION

- A. Starting installation constitutes acceptance of sub-floor conditions.
- B. Install in accordance with manufacturer's instructions.
- C. Spread only enough adhesive to permit installation of materials before initial set.
- D. Fit joints tightly.
- E. Set flooring in place, press with heavy roller to attain full adhesion.
- F. Where type of floor finish, pattern, or color are different on opposite sides of door, terminate flooring under centerline of door.
- G. Install edge strips at unprotected or exposed edges, where flooring terminates, and where indicated.
 - 1. Metal Strips: Attach to substrate before installation of flooring using stainless steel screws.
- H. Scribe flooring to walls, columns, cabinets, floor outlets, and other appurtenances to produce tight joints.

3.04 TILE FLOORING

- A. Mix tile from container to ensure shade variations are consistent when tile is placed, unless manufacturer's instructions say otherwise.
- B. Lay flooring with joints and seams parallel to building lines to produce symmetrical tile pattern.

3.05 RESILIENT BASE

- A. Fit joints tightly and make vertical. Maintain minimum dimension of 18 inches between joints.
- B. Miter internal corners. At external corners, use premolded units. At exposed ends, use premolded units.
- C. Install base on solid backing. Bond tightly to wall and floor surfaces.

- D. Scribe and fit to door frames and other interruptions.

3.06 CLEANING

- A. Remove excess adhesive from floor, base, and wall surfaces without damage.
- B. Clean in accordance with manufacturer's instructions.

3.07 PROTECTION

- A. Prohibit traffic on resilient flooring for 48 hours after installation.
- B. Provide initial sealing and/or waxing per manufacturer's instruction, using only manufacturer- approved materials.

END OF SECTION

SECTION 09-7733
GLASS FIBER REINFORCED PLASTIC PANELS

PART 1 GENERAL**1.01 SECTION INCLUDES**

- A. Glass fiber reinforced plastic panels.

1.02 REFERENCE STANDARDS

- A. ASTM D5319 - Standard Specification for Glass-Fiber Reinforced Polyester Wall and Ceiling Panels; 2012.
- B. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2014.

1.03 SUBMITTALS

- A. See Section 01-3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on specified products, describing physical and performance characteristics; including sizes, patterns and colors available; and installation instructions.
- C. Samples: Submit two samples 8x8 inch in size illustrating material and surface design of panels.

PART 2 PRODUCTS**2.01 MANUFACTURERS**

- A. Glass Fiber Reinforced Plastic Panels:
 - 1. Marlite_____: www.marlite.com.
 - 2. Substitutions: See Section 01-6000 - Product Requirements.

2.02 PANEL SYSTEMS

- A. Wall Panels:
 - 1. Panel Size: 4 by 8 feet.
 - 2. Panel Thickness: 0.090 inch (2.3 mm).
 - 3. Surface Design: Pebbled.
 - 4. Color: P 199 Bright White
 - 5. Attachment Method: Mechanical fasteners concealed by trim, with sealant in joints.

2.03 MATERIALS

- A. Panels: Glass fiber reinforced plastic (FRP), complying with ASTM D5319.
 - 1. Surface Burning Characteristics: Maximum Flame Spread Index of 25, and maximum Smoke Developed Index of 450; when system tested in accordance with ASTM E84.
- B. Sealant: ____; white.

PART 3 EXECUTION**3.01 EXAMINATION**

- A. Verify existing conditions and substrate flatness before starting work.
- B. Verify that substrate conditions are ready to receive the work of this section.

3.02 INSTALLATION - WALLS

- A. Install panels in accordance with manufacturer's instructions.
- B. Cut and drill panels with carbide tipped saw blades, drill bits, or snips.
- C. Pre-drill fastener holes in panels, 1/8 inch greater in diameter than fastener, spaced as indicated by panel manufacturer.
- D. Apply panels to wall with seams plumb and pattern aligned with adjoining panels.
- E. Install panels with manufacturer's recommended gap for panel field and corner joints.
- F. Drive fasteners to provide snug fit, and do not over-tighten.
- G. Fill channels in trim with sealant before attaching to panel.
- H. Seal gaps at floor, ceiling, and between panels with applicable sealant to prevent moisture intrusion.

- I. Remove excess sealant after paneling is installed and prior to curing.

END OF SECTION

SECTION 09-9123
INTERIOR PAINTING

PART 1 GENERAL**1.01 SECTION INCLUDES**

- A. Surface preparation.
- B. Field application of paints.
- C. Scope: Finish interior surfaces exposed to view, unless fully factory-finished _____.
- D. Do Not Paint or Finish the Following Items:
 - 1. Items factory-finished unless otherwise indicated; materials and products having factory-applied primers are not considered factory finished.
 - 2. Items indicated to receive other finishes.
 - 3. Items indicated to remain unfinished.
 - 4. Fire rating labels, equipment serial number and capacity labels, bar code labels, and operating parts of equipment.
 - 5. Floors, unless specifically indicated.
 - 6. Glass.
 - 7. Concealed pipes, ducts, and conduits.

1.02 REFERENCE STANDARDS

- A. MPI (APSM) - Master Painters Institute Architectural Painting Specification Manual; current edition, www.paintinfo.com.
- B. SSPC-SP 1 - Solvent Cleaning; 2015.
- C. SSPC-SP 6 - Commercial Blast Cleaning; Society for Protective Coatings; 2007.

1.03 SUBMITTALS

- A. See Section 01-3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide complete list of products to be used, with the following information for each:
 - 1. Manufacturer's name, product name and/or catalog number, and general product category (e.g. "alkyd enamel").
 - 2. MPI product number (e.g. MPI #47).
 - 3. Cross-reference to specified paint system(s) product is to be used in; include description of each system.
 - 4. If proposal of substitutions is allowed under submittal procedures, explanation of substitutions proposed.
- C. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. See Section 01-6000 - Product Requirements, for additional provisions.
 - 2. Extra Paint and Finish Materials: 1 gallon of each color; from the same product run, store where directed.
 - 3. Label each container with color in addition to the manufacturer's label.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
- B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.
- C. Paint Materials: Store at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

1.05 FIELD CONDITIONS

- A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.
- B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.

- C. Do not apply materials when relative humidity exceeds 85 percent; at temperatures less than 5 degrees F above the dew point; or to damp or wet surfaces.
- D. Minimum Application Temperatures for Paints: 50 degrees F for interiors unless required otherwise by manufacturer's instructions.
- E. Provide lighting level of 80 ft candles measured mid-height at substrate surface.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Provide paints and finishes used in any individual system from the same manufacturer; no exceptions.
- B. Paints:

2.02 PAINTS AND FINISHES - GENERAL

- A. Paints and Finishes: Ready mixed, unless intended to be a field-catalyzed paint.
 - 1. Provide paints and finishes of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
 - 2. Supply each paint material in quantity required to complete entire project's work from a single production run.
 - 3. Do not reduce, thin, or dilute paint or finishes or add materials unless such procedure is specifically described in manufacturer's product instructions.
- B. Volatile Organic Compound (VOC) Content: Comply with Section 01-6116.
- C. Flammability: Comply with applicable code for surface burning characteristics.
- D. Sheens: Provide the sheens specified; where sheen is not specified, sheen will be selected later by Architect from the manufacturer's full line.
- E. Colors: As indicated on drawings.
 - 1. Selection to be made by Architect after award of contract.

2.03 PAINT SYSTEMS - INTERIOR

- A. Paint I-OP - Interior Surfaces to be Painted, Unless Otherwise Indicated: Including gypsum board and shop primed steel.
 - 1. Two top coats and one coat primer.
 - 2. Top Coat(s): Interior Latex; MPI #52.
 - a. Products:
 - 1) Behr Premium Plus Interior Eggshell Enamel [No. 2050]. (MPI #52)
 - 2) PPG Paints Speedhide zero Latex, 6-4410XI Series, Satin. (MPI #52)
 - 3) Pratt & Lambert Pro-Hide Gold Ultra Interior Latex, Mid-Sheen. (MPI #52)
 - 4) Sherwin-Williams ProMar 200 Zero VOC Interior Latex, Eg-Shel. (MPI #52)
 - 3. Top Coat Sheen:
 - a. Eggshell: MPI gloss level 3; use this sheen at all locations.
 - 4. Primer: As recommended by top coat manufacturer for specific substrate.
- B. Paint I-OP-MD-DT - Medium Duty Door/Trim: For surfaces subject to frequent contact by occupants, including hollow metal doors & door frames:
 - 1. Two top coats and one coat primer.
 - 2. Top Coat(s): Interior Light Industrial Coating, Water Based; MPI #153 or 154.
 - a. Products:
 - 1) PPG Paints Pitt-Tech Plus, 90-1210 Series, Semi-Gloss. (MPI #153)
 - 2) Pratt & Lambert Industrial Acrylic Waterborne DTM, Semi-Gloss. (MPI #153)
 - 3) Sherwin-Williams Pro Industrial Acrylic Coating, Semi-Gloss. (MPI #153)
 - 3. Top Coat Sheen:
 - a. Semi-Gloss: MPI gloss level 5; use this sheen at all locations.
 - 4. Primer: As recommended by top coat manufacturer for specific substrate.

2.04 ACCESSORY MATERIALS

- A. Accessory Materials: Provide primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of painted surfaces.
- B. Patching Material: Latex filler.
- C. Fastener Head Cover Material: Latex filler.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Do not begin application of paints and finishes until substrates have been properly prepared.
- B. Verify that surfaces are ready to receive work as instructed by the product manufacturer.
- C. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially effect proper application.
- D. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- E. Test shop-applied primer for compatibility with subsequent cover materials.
- F. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:
 1. Gypsum Wallboard: 12 percent.

3.02 PREPARATION

- A. Clean surfaces thoroughly and correct defects prior to application.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces or finishing.
- D. Seal surfaces that might cause bleed through or staining of topcoat.
- E. Gypsum Board: Fill minor defects with filler compound. Spot prime defects after repair.
- F. Ferrous Metal:
 1. Solvent clean according to SSPC-SP1.
 2. Shop-Primed Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces. Re-prime entire shop-primed item.
 3. Remove rust, loose mill scale, and other foreign substances using methods recommended by paint manufacturer and blast cleaning according to SSPC-SP 6 "Commercial Blast Cleaning". Protect from corrosion until coated.

3.03 APPLICATION

- A. Apply products in accordance with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual".
- B. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.
- C. Apply each coat to uniform appearance in thicknesses specified by manufacturer.
- D. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.
- E. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.04 CLEANING

- A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

3.05 PROTECTION

- A. Protect finishes until completion of project.

B. Touch-up damaged finishes after Substantial Completion.

END OF SECTION

SECTION 10-0001
DIVISION 10 - SPECIALTIES

SECTION 10-1400

SIGNAGE

PART 1 GENERAL

1.01 INTERIOR AND EXTERIOR SIGNAGE TO BE SUPPLIED AND INSTALLED BY OWNER, UNDER A SEPARATE CONTRACT.

END OF SECTION

SECTION 10-2613
END WALL PROTECTION

PART 1 - GENERAL**1.01 SUMMARY**

- A. A. End wall protector system for wall protection

1.02 REFERENCES

- A. American Society for Testing and Materials (ASTM)
- B. Underwriters Laboratory (UL)

1.03 SYSTEM DESCRIPTION

- A. A. Performance Requirements: Provide end wall protectors that conform to the following requirements of regulatory agencies and the quality control of IPC Door and Wall Protection Systems, InPro Corporation.
 - 1. Fire Performance Characteristics: Provide UL Classified end wall protectors conforming with NFPA Class A fire rating. Surface burning characteristics, as determined by UL-723 (ASTM E-84), shall be flame spread of 10 and smoke development of 350 - 450. Provide ULC (Canada) listed end wall protectors conforming to the requirements of the National Building Code of Canada 2010, Subsection 3.1.13. Surface burning characteristics, as determined by CAN/ULC-S102.2, shall be flame spread of 15 and smoke developed of 35.
 - 2. Fire Performance Characteristics: Provide UL Classified Sanparrel, Rigid Vinyl Sheet conforming with the NFPA Class A fire rating. Surface burning characteristics, as determined by UL-723, for Sanparrel installed with 3M Fastbond 30, shall be flame spread of 10 and smoke development of 95-140 for .040" (1mm) thick material or flame spread of 15 and smoke development of 300 for .060" (1.5mm) thick material. For Sanparrel installed with Super Tek Products, XT-2000 adhesive, shall be flame spread of 20 and smoke development of 60-105 for .040" (1mm) thick material or flame spread of 20 and smoke development of 250 for .060" (1.5mm) thick material. Provide ULC (Canada) listed Sanparrel conforming to the requirements of the National building Code of Canada 2010, Subsection 3.1.13. Surface burning characteristics, as determined by CAN/ULC-S102.2, shall be flame spread of 15 and smoke developed of 30.
 - 3. Self Extinguishing: Provide end wall protectors with a CC1 classification, as tested in accordance with the procedures specified in ASTM D-635-74, Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Self-Supporting Plastics in a Horizontal Position, as referenced in UBC 52-4-1988.
 - 4. Fungal and Bacterial Resistance: Provide Rigid vinyl that does not support fungal or bacterial growth as tested in accordance with ASTM G-21 and ASTM G-22.

1.04 SUBMITTALS

- A. Product Data: Manufacturer's printed product data for each type of end wall protector specified.
- B. Detail Drawings: Mounting details with the appropriate adhesives for specific project substrates.
- C. Samples: Verification samples of end wall protector, 8" (203mm) long, in full size profiles of each type and color indicated.
- D. Manufacturer's Installation Instruction: Printed installation instructions for each end wall protector.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials in unopened factory packaging to the jobsite
- B. Inspect materials at delivery to assure that specified products have been received.
- C. Store in original packaging in a climate controlled location away from direct sunlight.

1.06 PROJECT CONDITIONS

- A. Environmental Requirements: Products must be installed in an interior climate controlled environment.

1.07 WARRANTY

- A. Standard IPC Limited Lifetime Warranty against material and manufacturing defects.

PART 2 - PRODUCTS**2.01 2.01 MANUFACTURER**

- A. Acceptable Manufacturer: IPC Door and Wall Protection Systems; InPro Corporation, PO Box 406 Muskego, WI 53150 USA; Telephone: 800-543-1729, Fax: 888-715-8407, Internet address: <http://www.inprocorp.com>
- B. Provide all end wall protectors and wall protection from a single source.

2.02 MANUFACTURED UNITS

- A. End Wall Protector System
 - 1. 150DBN BluNose End Wall Protector
 - a. 3" (76mm) x 3" (76mm), 90 degree
- B. Custom heights available

2.03 MATERIALS

- A. Vinyl Covers: Snap on cover of .080" (2mm) thickness shall be extruded from chemical and stain resistant polyvinyl chloride with the addition of impact modifiers. No plasticizers shall be added (plasticizers may aid in bacterial growth).
- B. Vinyl Retainers: Continuous vinyl retainers of .070" (1.8mm) thickness with a co-extruded Biopolymer Flex PVC apex shall be fabricated from polyvinyl chloride with the addition of impact modifiers.
- C. Single color for guards and protection sheets, to be selected from manufacturer's standards.

2.04 COMPONENTS

- A. Top caps and bottom caps shall be made of injection molded thermoplastics.
- B. Fasteners: All mounting system accessories appropriate for substrates indicated on the drawings shall be provided.

2.05 FINISHES

- A. Vinyl Covers: Colors of the corner guard to be selected by the architect from the IPC finish selection. Surface shall have a pebblette texture.
- B. Molded Components: Top caps and bottom caps shall be of a color matching the corner guards. Surface shall have a pebblette texture.

PART 3 - EXECUTION**3.01 EXAMINATION**

- A. Examine areas and conditions where end wall protector will be installed.
- B. Complete all finishing operations, including painting, before beginning installation of end wall protector system materials.
- C. Wall surface shall be dry and free from dirt, grease and loose paint.

3.02 PREPARATION

- A. General: Prior to installation, clean substrate to remove dust and debris.

3.03 INSTALLATION

- A. GENERAL: LOCATE THE END WALL PROTECTOR AS INDICATED ON THE APPROVED DETAIL DRAWING FOR THE APPROPRIATE SUBSTRATE AND IN COMPLIANCE WITH THE IPC INSTALLATION INSTRUCTIONS. INSTALL END WALL PROTECTOR LEVEL AND PLUMB AT THE HEIGHT INDICATED.
- B. Installation of the 150DBN BluNose End Wall Protectors:
 - 1. Adhere sheet material to the wall with factory applied adhesive backing or recommended IPC adhesive Fastbond 30 Contact Cement or XT-2000 Adhesive.
 - 2. Position the vinyl retainer against the wall, allowing 5/16" (8mm) from the bottom of the retainer to the top of the cove base or baseboard for the bottom cap.
 - 3. Secure the retainer to the wall using 1-1/4" phillips round head, self-tapping screws if mounting on drywall. Use 6 screws per 4' (1.22m) length, 10 screws per 8' (2.44m) length, or 12 screws per 9'

(2.74m) length. Use the slotted tabs on the top and bottom cap as a template to transfer holes onto the retainer. Holes should be staggered 1/4" on each wing.

4. Attach the top and bottom caps to the vinyl retainer using two, 1-1/4" phillips flat head, self-tapping screws per cap if mounting on drywall. The mounting tabs for the top and bottom caps overlap the retainer.
5. Position the vinyl cover on the vinyl retainer to check the fit. Adjust the top cap on the retainer to obtain a tight fit with the vinyl cover. Starting at the top, push the vinyl cover over the retainer, pressing over the entire length until the vinyl snaps securely into place. Attach the second corner guard in the same manner.

3.04 CLEANING

- A. At completion of the installation, clean surfaces in accordance with the IPC clean-up and maintenance instructions.

END OF SECTION

SECTION 11-0001
DIVISION 11 - EQUIPMENT

THIS DIVISION NOT USED

SECTION 12-0002
DIVISION 12 - FURNISHINGS

SECTION 12-3100
LAMINATED PLASTIC CABINETS & COUNTERTOPS

PART 1 GENERAL**1.01 SECTION INCLUDES**

- A. Base and Wall Cabinets

1.02 DESIGN REQUIREMENTS

- A. Casework shall be of the design and dimensions indicated on the drawings, and shall include any special sizes and supports to accommodate the designs shown.
- B. Fully dadoed and glued-dowel construction with concealed mechanical fastenings.
- C. Where sinks are shown in pre-finished cabinets or counter tops, the sinks and rims are to be furnished and installed by the plumbing contractor, unless otherwise specified.

1.03 SUBMITTALS

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Indicate materials used, layout, dimensions, construction details, accessories included.
- C. Warranty: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

1.04 QUALITY ASSURANCE

- A. Fabricator Qualifications: Company specializing in performing the work of this section with minimum five years of experience.

1.05 DELIVERY, STORAGE, AND PROTECTION

- A. Deliver cabinets and counter tops to project site in appropriate packaging.

1.06 PROJECT CONDITIONS

- A. Coordinate installation of required blocking and framing with Carpentry foreman.

1.07 WARRANTY

- A. See Section 01780 - Closeout Submittals, for additional warranty requirements.

PART 2 PRODUCTS**2.01 MATERIALS****A. Cabinets**

1. Bottoms, sides, tops and vertical partitions behind doors and drawers shall be 3/4", 45 pound density particle board with a thermally fused melamine finish.
2. All backs shall be fully bound and shall be 1/4", 45 pound density particle board with a thermally fused melamine finish.
3. Bottoms of wall hung units, shelves and all interiors shall have a thermally fused melamine finish, unless otherwise specified.
4. All shelving, where applicable, to be 1/8" thick, 45 pound density particle board with a thermally fused melamine finish.
5. All exposed vertical surfaces, ends, backs, door and drawer fronts shall be 1/32" high pressure plastic by Wilsonart, Formica Brand or other approved manufacturer. There shall be a balanced backing sheet, on all doors and drawer fronts.
6. Exposed edges of cabinets and dividers to be 1/32" plastic laminate to match exterior colors or heavy duty .040 PVC edge banding, colors as specified.
7. Exposed edges of shelves to be Standard Duty .020 PVC edge banding to match interior color.

B. Hardware:

1. Hinges to be institutional heavy-duty, five knuckle fixed pin, hospital tip, in satin chrome or satin black finish; or fully concealed, self closing, 110 degree opening, 1/16" reveal in satin chrome or satin black finish.
2. Door/Drawer pulls to be metal bent wire, ABS plastic recessed, ABS plastic flush, or ABS plastic wire, in manufacturer's stock finish selection.

3. Shelf supports to be steel tracks, adjustable on 1/2" centers, maximum load rated at 500 pounds. Plastic, spoon and flat clips are not acceptable.
4. Drawer slides to be KV-1284 series, 3/4 extension, 100 pound capacity, ball bearing slide, bottom/side mount. File slides to be full extension.
5. Magnetic catches, locks and other hardware available per specifications.

C. Drawers

1. Drawer boxes to be 1/2" sides, 3/4" sub-fronts and backs, and 1/4" bottoms of 45 pound density particle board with a thermally fused melamine finish. Joints shall be doweled with the bottoms recessed 1/2" and routed 1/4" into sides and ends and securely glued. ABS plastic, wire or 'Metabox' drawers are not acceptable.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field conditions are suitable for installation of cabinets and counterwork.
- B. Where cabinetwork installs adjacent to, attached to or in close proximity to other construction, verify before beginning installation that said adjacent construction is suitable for attachment to or covering over. Beginning the work implies acceptance of adjacent construction.
- C. Notify Architect of any field conditions at variance with drawings, specifications or previously submitted sketches.

3.02 INSTALLATION

- A. Cabinetry contractor will completely install all units at the proper locations where shown on the plans.
- B. Installation shall be under the supervision of an experienced, competent cabinetry installer, and shall be performed by properly skilled and experienced employees. Supervision and employees shall be experienced in installation of all the related items.
- C. Cabinets will be installed plumb, level and true with no distortions and all joints tight.
- D. All doors, drawers, pullouts, and other moveable items shall be left plumb and aligned, and shall work with ease and without binding.
- E. Cabinetry contractor shall make cutouts for sinks, plumbing, grommets or other items as necessary to onstall the cabinets.
- F. Any damage as a result of shipment or installation shall be repaired or replaced by this contractor.
- G. Cabinets shall be left clean and ready for use.
- H. Upon completion of cabinet installation, all debris resulting from the installation operation will be disposed of off site.

3.03 PROTECTION

- A. Protect installed cabinets and counter tops from subsequent construction operations.

END OF SECTION

SECTION 12-3600

COUNTERTOPS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Countertops for manufactured casework.

1.02 REFERENCE STANDARDS

- A. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
- B. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards.
- C. ISFA 2-01 - Classification and Standards for Solid Surfacing Material; International Surface Fabricators Association.
- D. NEMA LD 3 - High-Pressure Decorative Laminates.
- E. PS 1 - Structural Plywood.

1.03 SUBMITTALS

- A. See Section 01-3000 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Complete details of materials and installation .
- C. Selection Samples: For each finish product specified, color chips representing manufacturer's full range of available colors and patterns.
- D. Test Reports: Chemical resistance testing, showing compliance with specified requirements.

1.04 QUALITY ASSURANCE

- A. Fabricator Qualifications: Same fabricator as for cabinets on which tops are to be installed.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.06 FIELD CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

PART 2 PRODUCTS

2.01 COUNTERTOP ASSEMBLIES

- A. Quality Standard: Custom Grade, in accordance with AWI/AWMAC/WI (AWS).
- B. Solid Surfacing Countertops: Solid surfacing sheet or plastic resin casting over continuous substrate.
 - 1. Flat Sheet Thickness: 1/2 inch, minimum.
 - 2. Solid Surfacing Sheet and Plastic Resin Castings: Complying with ISFA 2-01 and NEMA LD 3; acrylic or polyester resin, mineral filler, and pigments; homogenous, non-porous and capable of being worked and repaired using standard woodworking tools; no surface coating; color and pattern consistent throughout thickness.
 - a. Surface Burning Characteristics: Flame spread 25, maximum; smoke developed 450, maximum; when tested in accordance with ASTM E84.
 - b. NSF approved for food contact.
 - c. Sinks & Bowls: provide openings for drop in fixtures.
 - d. Finish on Exposed Surfaces: Semi-gloss, gloss rating of 25 to 50.
 - e. Color and Pattern: As selected by Architect from manufacturer's full line.
 - f. Manufacturers:
 - 1) Dupont; _____: www.corian.com.
 - 2) Formica Corporation; _____: www.formica.com.
 - 3) Avonite Surfaces : www.avonitesurfaces.com.
 - 4) Wilsonart, LLC; _____: www.wilsonart.com.

3. Other Components Thickness: 1/2 inch, minimum.
4. Exposed Edge Treatment: Built up to minimum 1-1/4 inch thick; bullnosed edge.
5. Back and End Splashes: Same sheet material, square top; minimum 4 inches high.

2.02 ACCESSORY MATERIALS

- A. Plywood for Supporting Substrate: PS 1 Exterior Grade, A-C veneer grade, minimum 5-ply; minimum 3/4 inch thick; join lengths using metal splines.
- B. Adhesives: Chemical resistant waterproof adhesive as recommended by manufacturer of materials being joined.

2.03 FABRICATION

- A. Fabricate tops and splashes in the largest sections practicable, with top surface of joints flush.
 1. Join lengths of tops using best method recommended by manufacturer.
 2. Fabricate to overhang fronts and ends of cabinets 1 inch except where top butts against cabinet or wall.
 3. Prepare all cutouts accurately to size; replace tops having improperly dimensioned or unnecessary cutouts or fixture holes.
- B. Provide back/end splash wherever counter edge abuts vertical surface unless otherwise indicated.
 1. Secure to countertop with concealed fasteners and with contact surfaces set in waterproof glue.
 2. Height: 4 inches, unless otherwise indicated.
- C. Solid Surfacing: Fabricate tops up to 144 inches long in one piece; join pieces with adhesive sealant in accordance with manufacturer's recommendations and instructions.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- C. Verify that wall surfaces have been finished and mechanical and electrical services and outlets are installed in proper locations.

3.02 INSTALLATION

- A. Securely attach countertops to cabinets using concealed fasteners. Make flat surfaces level; shim where required.
- B. Seal joint between back/end splashes and vertical surfaces.

3.03 TOLERANCES

- A. Variation From Horizontal: 1/8 inch in 10 feet, maximum.
- B. Offset From Wall, Countertops: 1/8 inch maximum; 1/16 inch minimum.
- C. Field Joints: 1/8 inch wide, maximum.

3.04 CLEANING

- A. Clean countertops surfaces thoroughly.

3.05 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Date of Substantial Completion.

END OF SECTION

SECTION 13-0001
DIVISION 13 - SPECIAL CONSTRUCTION

SECTION 14-0001
DIVISION 14 - CONVEYING EQUIPMENT
DIVISION NOT USED

SECTION 22-0001
DIVISION 22 - PLUMBING

SECTION 22-1010
PLUMBING PIPING

PART 1 GENERAL**1.01 SECTION INCLUDES**

- A. Pipe, pipe fittings, valves, and connections for piping systems.
 - 1. Sanitary sewer.
 - 2. Domestic water.

1.02 REFERENCE STANDARDS

- A. ASME B16.18 - Cast Copper Alloy Solder Joint Pressure Fittings; The American Society of Mechanical Engineers; 2012 (ANSI B16.18).
- B. ASME B16.22 - Wrought Copper and Copper Alloy Solder Joint Pressure Fittings; The American Society of Mechanical Engineers; 2001 (R2010).
- C. ASME B31.9 - Building Services Piping; The American Society of Mechanical Engineers; 2011 (ANSI/ASME B31.9).
- D. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless; 2012.
- E. ASTM B32 - Standard Specification for Solder Metal; 2008.
- F. ASTM B88 - Standard Specification for Seamless Copper Water Tube; 2009.
- G. ASTM D2665 - Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Drain, Waste, and Vent Pipe and Fittings; 2012.
- H. ASTM D2729 - Standard Specification for Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings; 2011.
- I. ASTM D2855 - Standard Practice for Making Solvent-Cemented Joints with Poly(Vinyl Chloride) (PVC) Pipe and Fittings; 1996 (Reapproved 2010).
- J. AWWA C651 - Disinfecting Water Mains; American Water Works Association; 2005 (ANSI/AWWA C651).
- K. MSS SP-58 - Pipe Hangers and Supports - Materials, Design, Manufacture, Selection, Application, and Installation; Manufacturers Standardization Society of the Valve and Fittings Industry, Inc.; 2009.
- L. NFPA 54 - National Fuel Gas Code; National Fire Protection Association; 2012.

1.03 SUBMITTALS

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on pipe materials, pipe fittings, valves, and accessories. Provide manufacturers catalog information. Indicate valve data and ratings.
- C. Project Record Documents: Record actual locations of valves.
- D. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. See Section 01600 - Product Requirements, for additional provisions.
 - 2. Valve Repacking Kits: One for each type and size of valve.

1.04 QUALITY ASSURANCE

- A. Perform work in accordance with applicable codes.
- B. Valves: Manufacturer's name and pressure rating marked on valve body.
- C. Identify pipe with marking including size, ASTM material classification, ASTM specification, potable water certification, water pressure rating.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Provide temporary end caps and closures on piping and fittings. Maintain in place until installation.
- B. Protect piping systems from entry of foreign materials by temporary covers, completing sections of the work, and isolating parts of completed system.

PART 2 PRODUCTS

2.01 SANITARY SEWER PIPING, ABOVE GRADE

- A. PVC Pipe: ASTM D2729.
 - 1. Fittings: PVC.
 - 2. Joints: Solvent welded, with ASTM D2564 solvent cement.

2.02 WATER PIPING, ABOVE GRADE

- A. Copper Tube: ASTM B88 (ASTM B88M), Type K (A), Drawn (H).
 - 1. Fittings: ASME B16.18, cast copper alloy or ASME B16.22, wrought copper and bronze.
 - 2. Joints: ASTM B32, alloy Sn95 solder.

B.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that excavations are to required grade, dry, and not over-excavated.

3.02 PREPARATION

- A. Ream pipe and tube ends. Remove burrs. Bevel plain end ferrous pipe.
- B. Remove scale and dirt, on inside and outside, before assembly.
- C. Prepare piping connections to equipment with flanges or unions.

3.03 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Provide non-conducting dielectric connections wherever jointing dissimilar metals.
- C. Route piping in orderly manner and maintain gradient. Route parallel and perpendicular to walls.
- D. Install piping to maintain headroom, conserve space, and not interfere with use of space.
- E. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment. Refer to Section 15122.
- F. Provide access where valves and fittings are not exposed. Coordinate size and location of access doors with Section 08310.
- G. Install valves with stems upright or horizontal, not inverted.
- H. Install water piping to ASME B31.9.
- I. PVC Pipe: Make solvent-welded joints in accordance with ASTM D2855.
- J. Pipe Hangers and Supports:
 - 1. Install in accordance with ASME B31.9.
 - 2. Install hangers to provide minimum 1/2 inch (15 mm) space between finished covering and adjacent work.
 - 3. Place hangers within 12 inches (300 mm) of each horizontal elbow.
 - 4. Use hangers with 1-1/2 inch (40 mm) minimum vertical adjustment. Design hangers for pipe movement without disengagement of supported pipe.
 - 5. Support vertical piping at every floor. Support riser piping independently of connected horizontal piping.
 - 6. Where several pipes can be installed in parallel and at same elevation, provide multiple or trapeze hangers.
 - 7. Provide copper plated hangers and supports for copper piping.
 - 8. Provide hangers adjacent to motor driven equipment with vibration isolation; refer to Section 15072.
 - 9. Support cast iron drainage piping at every joint.

3.04 TOLERANCES

- A. Water Piping: Slope at minimum of 1/32 inch per foot (1:400) and arrange to drain at low points.

3.05 DISINFECTION OF DOMESTIC WATER PIPING SYSTEM

- A. Prior to starting work, verify system is complete, flushed and clean.

- B. Inject disinfectant, free chlorine in liquid, powder, tablet or gas form, throughout system to obtain 50 to 80 mg/L residual.
- C. Bleed water from outlets to ensure distribution and test for disinfectant residual at minimum 15 percent of outlets.
- D. Maintain disinfectant in system for 24 hours.
- E. If final disinfectant residual tests less than 25 mg/L, repeat treatment.
- F. Flush disinfectant from system until residual equal to that of incoming water or 1.0 mg/L.
- G. Take samples no sooner than 24 hours after flushing, from 10 percent of outlets and from water entry, and analyze in accordance with AWWA C651.

END OF SECTION

SECTION 22-4000
PLUMBING FIXTURES

PART 1 GENERAL**1.01 SECTION INCLUDES**

- A. Sinks.
- B. Service sinks.

1.02 REFERENCE STANDARDS

- A. ADA Standards - Americans with Disabilities Act (ADA) Standards for Accessible Design.
- B. ANSI Z358.1 - American National Standard for Emergency Eyewash and Shower Equipment.
- C. NSF 61 - Drinking Water System Components - Health Effects.
- D. NSF 372 - Drinking Water System Components - Lead Content.

1.03 SUBMITTALS

- A. See Section 01-3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide catalog illustrations of fixtures, sizes, rough-in dimensions, utility sizes, trim, and finishes.
- C. Manufacturer's Instructions: Indicate installation methods and procedures.
- D. Maintenance Data: Include fixture trim exploded view and replacement parts lists.
- E. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.
- F. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. See Section 01-6000 - Product Requirements, for additional provisions.
 - 2. Extra Faucet Washers: One set of each type and size.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Accept fixtures on site in factory packaging. Inspect for damage.
- B. Protect installed fixtures from damage by securing areas and by leaving factory packaging in place to protect fixtures and prevent use.

1.05 WARRANTY

- A. Provide five year manufacturer warranty for electric water cooler.

PART 2 PRODUCTS**2.01 GENERAL**

- A. Potable Water Systems: Provide plumbing fittings and faucets that comply with NSF 61 and NSF 372 for maximum lead content; label pipe and fittings.

2.02 SINKS

- A. See Mechanical Engineer's plans and notes for product selections.

2.03 SERVICE SINKS

- A. See Mechanical Engineer's plans and notes for product selections.

PART 3 EXECUTION**3.01 EXAMINATION**

- A. Verify that walls and floor finishes are prepared and ready for installation of fixtures.
- B. Confirm that millwork is constructed with adequate provision for the installation of counter top lavatories and sinks.

3.02 PREPARATION

- A. Rough-in fixture piping connections in accordance with minimum sizes indicated in fixture rough-in schedule for particular fixtures.

3.03 INSTALLATION

- A. Install each fixture with trap, easily removable for servicing and cleaning.
- B. Provide chrome plated rigid or flexible supplies to fixtures with loose key stops, reducers, and escutcheons.
- C. Install components level and plumb.
- D. Install and secure fixtures in place with wall supports and bolts.
- E. Solidly attach water closets to floor with lag screws. Lead flashing is not intended hold fixture in place.

3.04 INTERFACE WITH WORK OF OTHER SECTIONS

- A. Review millwork shop drawings. Confirm location and size of fixtures and openings before rough-in and installation.

3.05 ADJUSTING

- A. Adjust stops or valves for intended water flow rate to fixtures without splashing, noise, or overflow.

3.06 CLEANING

- A. Clean plumbing fixtures and equipment.

3.07 PROTECTION

- A. Protect installed products from damage due to subsequent construction operations.
- B. Repair or replace damaged products before Date of Substantial Completion.

END OF SECTION

SECTION 23-0001
DIVISION 23 - HVAC

SECTION 23-3150**DUCTS****PART 1 GENERAL****1.01 SECTION INCLUDES**

- A. Metal ductwork.
- B. Nonmetal ductwork.

1.02 REFERENCE STANDARDS

- A. ASHRAE (FUND) - ASHRAE Handbook - Fundamentals; 2009.
- B. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2011.
- C. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate; 2010.
- D. NFPA 90A - Standard for the Installation of Air-Conditioning and Ventilating Systems; National Fire Protection Association; 2012.
- E. SMACNA (DCS) - HVAC Duct Construction Standards; 2005.

1.03 SUBMITTALS

- A. Shop Drawings: Indicate duct fittings, particulars such as gages, sizes, welds, and configuration prior to start of work for HVAC systems.
- B. Project Record Documents: Record actual locations of ducts and duct fittings. Record changes in fitting location and type. Show additional fittings used.

1.04 FIELD CONDITIONS

- A. Do not install duct sealants when temperatures are less than those recommended by sealant manufacturers.
- B. Maintain temperatures within acceptable range during and after installation of duct sealants.

PART 2 PRODUCTS**2.01 MATERIALS**

- A. Galvanized Steel for Ducts: Hot-dipped galvanized steel sheet, ASTM A653/A653M FS Type B, with G60/Z180 coating.
- B. Joint Sealers and Sealants: Non-hardening, water resistant, mildew and mold resistant.
 - 1. Type: Heavy mastic or liquid used alone or with tape, suitable for joint configuration and compatible with substrates, and recommended by manufacturer for pressure class of ducts.
 - 2. VOC Content: Not more than 250 g/L, excluding water.
 - 3. Surface Burning Characteristics: Flame spread of zero, smoke developed of zero, when tested in accordance with ASTM E84.
 - 4. For Use With Flexible Ducts: UL labeled.
- C. Hanger Rod: ASTM A36/A36M; steel, galvanized; threaded both ends, threaded one end, or continuously threaded.

2.02 DUCTWORK FABRICATION

- A. Fabricate and support in accordance with SMACNA HVAC Duct Construction Standards and as indicated.
- B. Construct T's, bends, and elbows with radius of not less than 1-1/2 times width of duct on centerline. Where not possible and where rectangular elbows must be used, provide air foil turning vanes of perforated metal with glass fiber insulation.
- C. Provide turning vanes of perforated metal with glass fiber insulation when acoustical lining is indicated.
- D. Increase duct sizes gradually, not exceeding 15 degrees divergence wherever possible; maximum 30 degrees divergence upstream of equipment and 45 degrees convergence downstream.
- E. Fabricate continuously welded round and oval duct fittings in accordance with SMACNA HVAC Duct Construction Standards.

2.03 MANUFACTURED DUCTWORK AND FITTINGS

- A. Flexible Ducts: Two ply vinyl film supported by helically wound spring steel wire.
 - 1. Pressure Rating: 10 inches WG positive and 1.0 inches WG negative.
 - 2. Maximum Velocity: 4000 fpm.
 - 3. Temperature Range: -10 degrees F to 160 degrees F.
 - 4. Flexible duct runs shall not exceed 14 feet in length without prior approval of the Architect and Engineer.
- B. Flexible Ducts: Black polymer film supported by helically wound spring steel wire.
 - 1. UL labeled.
 - 2. Pressure Rating: 4 inches WG positive and 0.5 inches WG negative.
 - 3. Maximum Velocity: 4000 fpm.
 - 4. Temperature Range: -20 degrees F to 175 degrees F.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install, support, and seal ducts in accordance with SMACNA HVAC Duct Construction Standards.
- B. Install in accordance with manufacturer's instructions.
- C. During construction provide temporary closures of metal or taped polyethylene on open ductwork to prevent construction dust from entering ductwork system.
- D. Flexible Ducts: Connect to metal ducts with adhesive.
- E. Duct sizes indicated are inside clear dimensions. For lined ducts, maintain sizes inside lining.
- F. Provide openings in ductwork where required to accommodate thermometers and controllers. Provide pilot tube openings where required for testing of systems, complete with metal can with spring device or screw to ensure against air leakage. Where openings are provided in insulated ductwork, install insulation material inside a metal ring.
- G. Locate ducts with sufficient space around equipment to allow normal operating and maintenance activities.
- H. Use double nuts and lock washers on threaded rod supports.
- I. Connect terminal units to supply ducts directly or with one foot maximum length of flexible duct. Do not use flexible duct to change direction.
- J. Connect diffusers or light troffer boots to low pressure ducts directly or with 5 feet maximum length of flexible duct held in place with strap or clamp.
- K. At exterior wall louvers, seal duct to louver frame and install blank-out panels.

3.02 CLEANING

- A. Clean duct system and force air at high velocity through duct to remove accumulated dust. To obtain sufficient air, clean half the system at a time. Protect equipment that could be harmed by excessive dirt with temporary filters, or bypass during cleaning.

END OF SECTION

SECTION 23-3160
DUCT INSULATION

PART 1 GENERAL**1.01 SECTION INCLUDES**

- A. Duct insulation.
- B. Duct Liner.

1.02 REFERENCE STANDARDS

- A. ASTM C916 - Standard Specification for Adhesives for Duct Thermal Insulation; 1985 (Reapproved 2007).
- B. ASTM C1338 - Standard Test Method for Determining Fungi Resistance of Insulation Materials and Facings; 2008.
- C. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2012.
- D. ASTM G21 - Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi; 2009.
- E. NFPA 255 - Standard Method of Test of Surface Burning Characteristics of Building Materials; National Fire Protection Association; 2006.
- F. SMACNA (DCS) - HVAC Duct Construction Standards; Sheet Metal and Air Conditioning Contractors' National Association; 2005.
- G. UL 723 - Standard for Test for Surface Burning Characteristics of Building Materials; Underwriters Laboratories Inc.; Current Edition, Including All Revisions.

1.03 SUBMITTALS

- A. Product Data: Provide product description, thermal characteristics, list of materials and thickness for each service, and locations.
- B. Manufacturer's Instructions: Indicate installation procedures necessary to ensure acceptable workmanship and that installation standards will be achieved.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Accept materials on site in original factory packaging, labelled with manufacturer's identification, including product density and thickness.
- B. Protect insulation from weather and construction traffic, dirt, water, chemical, and mechanical damage, by storing in original wrapping.

1.05 FIELD CONDITIONS

- A. Maintain ambient temperatures and conditions required by manufacturers of adhesives, mastics, and insulation cements.
- B. Maintain temperature during and after installation for minimum period of 24 hours.

PART 2 PRODUCTS**2.01 REQUIREMENTS FOR ALL PRODUCTS OF THIS SECTION**

- A. Surface Burning Characteristics: Flame spread/Smoke developed index of 25/50, maximum, when tested in accordance with ASTM E84, NFPA 255, or UL 723.

2.02 GLASS FIBER, FLEXIBLE

- A. Manufacturer:
 1. Knauf Insulation; www.knaufusa.com.
 2. Johns Manville Corporation; www.jm.com.
 3. Owens Corning Corp; www.owenscorning.com.
 4. CertainTeed Corporation; www.certainteed.com.
 5. Substitutions: See Section 01600 - Product Requirements.
- B. Insulation: ASTM C553; flexible, noncombustible blanket.
 1. 'K' value: 0.36 at 75 degrees F, when tested in accordance with ASTM C518.

2. Maximum Service Temperature: 1200 degrees F.
3. Maximum Water Vapor Sorption: 5.0 percent by weight.

C. Vapor Barrier Jacket:

1. Kraft paper with glass fiber yarn and bonded to aluminized film.
2. Moisture Vapor Permeability: 0.02 perm inch, when tested in accordance with ASTM E96/E96M.
3. Secure with pressure sensitive tape.

D. Vapor Barrier Tape:

1. Kraft paper reinforced with glass fiber yarn and bonded to aluminized film, with pressure sensitive rubber based adhesive.

E. Outdoor Vapor Barrier Mastic:

1. Vinyl emulsion type acrylic or mastic, compatible with insulation, black color.

F. Tie Wire: Annealed steel, 16 gage.

2.03 DUCT LINER

A. Manufacturers:

1. Knauf Insulation: www.knaufusa.com.
2. Johns Manville Corporation: www.jm.com.
3. Owens Corning Corp: www.owenscorning.com.
4. CertainTeed Corporation: www.certainteed.com.

B. Insulation: Non-corrosive, incombustible glass fiber complying with ASTM C1071; rigid board and preformed round liner board; impregnated surface and edges coated with poly vinyl acetate polymer, or acrylic polymer.

1. Fungi Resistance: ASTM G21.
2. Apparent Thermal Conductivity: Maximum of 0.31 at 75 degrees F.
3. Service Temperature: Up to 250 degrees F.
4. Rated Velocity on Coated Air Side for Air Erosion: 5,000 fpm, minimum.

C. Adhesive: Waterproof, fire-retardant type, ASTM C916.

D. Liner Fasteners: Galvanized steel, self-adhesive pad with integral head.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that ducts have been tested before applying insulation materials.
- B. Verify that surfaces are clean, foreign material removed, and dry.

3.02 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Install in accordance with NAIMA National Insulation Standards.
- C. Insulated ducts conveying air below ambient temperature:
 1. Provide insulation with vapor barrier jackets.
 2. Continue insulation through walls, sleeves, hangers, and other duct penetrations.
 3. Insulate entire system including fittings, joints, flanges, fire dampers, flexible connections, and expansion joints.
- D. Insulated ducts conveying air above ambient temperature:
 1. Insulate fittings and joints. Where service access is required, bevel and seal ends of insulation.
- E. Duct and Plenum Liner Application:
 1. Adhere insulation with adhesive for 90 percent coverage.
 2. Secure insulation with mechanical liner fasteners. Refer to SMACNA HVAC Duct Construction Standards for spacing.
 3. Seal and smooth joints. Seal and coat transverse joints.
 4. Seal liner surface penetrations with adhesive.
 5. Duct dimensions indicated are net inside dimensions required for air flow. Increase duct size to allow for insulation thickness.

END OF SECTION

SECTION 23-3350
DUCT ACCESSORIES

PART 1 GENERAL**1.01 SECTION INCLUDES**

- A. Air turning devices/extractors.
- B. Duct access doors.
- C. Duct test holes.
- D. Flexible duct connections.
- E. Volume control dampers.

1.02 REFERENCE STANDARDS

- A. NFPA 90A - Standard for the Installation of Air-Conditioning and Ventilating Systems; National Fire Protection Association; 2012.
- B. SMACNA (DCS) - HVAC Duct Construction Standards; 2005.

1.03 SUBMITTALS

- A. Product Data: Provide for shop fabricated assemblies including volume control dampers. Include electrical characteristics and connection requirements.
- B. Shop Drawings: Indicate for shop fabricated assemblies including volume control dampers.
- C. Project Record Drawings: Record actual locations of access doors and test holes.

1.04 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section, with minimum three years of documented experience.
- B. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories Inc. as suitable for the purpose specified and indicated.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Protect dampers from damage to operating linkages and blades.

PART 2 PRODUCTS**2.01 AIR TURNING DEVICES/EXTRACTORS**

- A. Manufacturers:
 1. Krueger: www.krueger-hvac.com.
 2. Ruskin Company: www.ruskin.com.
 3. Titus: www.titus-hvac.com.
- B. Multi-blade device with blades aligned in short dimension; steel construction; with individually adjustable blades, mounting straps.

2.02 DUCT ACCESS DOORS

- A. Manufacturers:
 1. Acudor Products Inc: www.acudor.com.
 2. Nailor Industries Inc: www.nailor.com.
 3. Ruskin Company: www.ruskin.com.
 4. SEMCO Incorporated: www.semcoinc.com.
 5. Substitutions: See Section 01600 - Product Requirements.
- B. Fabrication: Rigid and close-fitting of galvanized steel with sealing gaskets and quick fastening locking devices. For insulated ducts, install minimum 1 inch thick insulation with sheet metal cover.
 1. Less Than 12 inches Square: Secure with sash locks.
 2. Up to 18 inches Square: Provide two hinges and two sash locks.
 3. Up to 24 x 48 inches: Three hinges and two compression latches with outside and inside handles.
 4. Larger Sizes: Provide an additional hinge.
- C. Access doors with sheet metal screw fasteners are not acceptable.

2.03 DUCT TEST HOLES

- A. Temporary Test Holes: Cut or drill in ducts as required. Cap with neat patches, neoprene plugs, threaded plugs, or threaded or twist-on metal caps.
- B. Permanent Test Holes: Factory fabricated, air tight flanged fittings with screw cap. Provide extended neck fittings to clear insulation.

2.04 FLEXIBLE DUCT CONNECTIONS

- A. Fabricate in accordance with SMACNA HVAC Duct Construction Standards and as indicated.
- B. Flexible Duct Connections: Fabric crimped into metal edging strip.

2.05 VOLUME CONTROL DAMPERS

- A. Manufacturers:
 1. Nailor Industries Inc: www.nailor.com.
 2. Ruskin Company: www.ruskin.com.
- B. Fabricate in accordance with SMACNA HVAC Duct Construction Standards and as indicated.
- C. Single Blade Dampers: Fabricate for duct sizes up to 6 x 30 inch.
- D. Multi-Blade Damper: Fabricate of opposed blade pattern with maximum blade sizes 8 x 72 inch. Assemble center and edge crimped blades in prime coated or galvanized channel frame with suitable hardware.
- E. End Bearings: Except in round ducts 12 inches and smaller, provide end bearings. On multiple blade dampers, provide oil-impregnated nylon or sintered bronze bearings.

PART 3 EXECUTION

3.01 PREPARATION

- A. Verify that electric power is available and of the correct characteristics.

3.02 INSTALLATION

- A. Install accessories in accordance with manufacturer's instructions, NFPA 90A, and follow SMACNA HVAC Duct Construction Standards. Refer to Section 15810 for duct construction and pressure class.
- B. Provide duct access doors for inspection and cleaning before and after filters, coils, fans, automatic dampers, at fire dampers, combination fire and smoke dampers, and elsewhere as indicated. Provide for cleaning kitchen exhaust ducts in accordance with NFPA 96. Provide minimum 8 x 8 inch size for hand access, size for shoulder access, and as indicated. Provide 4 x 4 inch for balancing dampers only. Review locations prior to fabrication.
- C. Provide duct test holes where indicated and required for testing and balancing purposes.
- D. Provide balancing dampers on duct take-off to diffusers, grilles, and registers, regardless of whether dampers are specified as part of the diffuser, grille, or register assembly.

END OF SECTION

SECTION 23-3710
AIR OUTLETS AND INLETS

PART 1 GENERAL**1.01 SECTION INCLUDES**

- A. Diffusers.
- B. Registers/grilles.

1.02 REFERENCE STANDARDS

- A. SMACNA (DCS) - HVAC Duct Construction Standards; 2005.

1.03 SUBMITTALS

- A. See Section 01300 - Administrative Requirements for submittal procedures.
- B. Submit manufacturer information for proposed items, including model numbers, finishes, performance characteristics and installation direction.

PART 2 PRODUCTS**2.01 MANUFACTURERS**

- A. See Mechanical Engineer's plans and notes for product selections ('M-1' Sheet).
- B. Substitutions: See Section 01600 - Product Requirements.

PART 3 EXECUTION**3.01 INSTALLATION**

- A. Install in accordance with manufacturer's instructions.
- B. Check location of outlets and inlets and make necessary adjustments in position to conform with architectural features, symmetry, and lighting arrangement.
- C. Install diffusers to ductwork with air tight connection.
- D. Provide balancing dampers on duct take-off to diffusers, and grilles and registers, despite whether dampers are specified as part of the diffuser, or grille and register assembly.
- E. Paint ductwork visible behind air outlets and inlets matte black. Refer to Section 09900.

END OF SECTION

SECTION 23-5400
FORCED AIR FURNACES

PART 1 GENERAL**1.01 SECTION INCLUDES**

- A. Forced air furnaces.
- B. Controls.

1.02 REFERENCE STANDARDS

- A. ASHRAE Std 52.1 - Gravimetric and Dust-Spot Procedures for Testing Air-Cleaning Devices Used in General Ventilation for Removing Particulate Matter; American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.; 1992.
- B. NFPA 54 - National Fuel Gas Code; National Fire Protection Association; 2012.
- C. NFPA 90A - Standard for the Installation of Air-Conditioning and Ventilating Systems; National Fire Protection Association; 2012.

1.03 SUBMITTALS

- A. Product Data: Provide rated capacities, weights, accessories, electrical nameplate data, and wiring diagrams.
- B. Shop Drawings: Indicate assembly, required clearances, and location and size of field connections.
- C. Manufacturer's Instructions: Indicate rigging, assembly, and installation instructions.
- D. Project Record Documents: Record actual locations of components and connections.
- E. Operation and Maintenance Data: Include manufacturer's descriptive literature, operating instructions, installation instructions, maintenance and repair data, and parts listing.
- F. Warranty: Submit manufacturers warranty and ensure forms have been filled out in Owner's name and registered with manufacturer.
- G. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. See Section 01600 - Product Requirements, for additional provisions.
 - 2. Extra Filters: One for each furnace.

1.04 REGULATORY REQUIREMENTS

- A. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories Inc. as suitable for the purpose specified and indicated.

1.05 WARRANTY

- A. See Section 01780 - Closeout Submittals, for additional warranty requirements.
- B. Provide three year manufacturers warranty for solid state ignition modules.
- C. Provide five year manufacturers warranty for heat exchangers.

PART 2 PRODUCTS**2.01 SEE MECHANICAL ENGINEER'S PLANS FOR SELECTIONS & DETAILS.****2.02 GAS FIRED FURNACES**

- A. See Mechanical Engineer's plans and notes for product requirements.
- B. Manufacturers:
 - 1. Lennox, Trane, Carrier are all acceptable.
 - 2. Substitutions: See Section 01600 - Product Requirements.

2.03 ELECTRIC FURNACES

- A. Units: Self-contained, packaged, factory assembled, pre-wired unit consisting of cabinet, supply fan, heating element, controls, air filter, humidifier, and accessories; wired for single power connection with control transformer.
 - 1. Heating: Electric.

- B. Cabinet: Steel with baked enamel finish, easily removed and secured access doors, glass fiber insulation and reflective liner.
- C. Electric Heater Operating Controls:
 - 1. Low voltage adjustable room thermostat energized heater stages in sequence with pre-determined delay between heating stages.
 - 2. Supply fan starts before electric elements are energized and continues operating after thermostat is satisfied until bonnet temperature reaches minimum setting. Include manual switch for continuous fan operation.
- D. Air Filters: 1 inch thick urethane, washable type arranged for easy replacement.

2.04 THERMOSTATS

- A. Room Thermostat: Low voltage, electric solid state microcomputer based room thermostat:
 - 1. System selector switch (heat-off) and fan control switch (auto-on).
 - 2. Set-up for four separate temperatures per day.
 - 3. Instant override of setpoint for continuous or timed period from one hour to 31 days.
 - 4. Short cycle protection.
 - 5. Programming based on weekdays, Saturday and Sunday.
 - 6. Battery replacement without program loss.
 - 7. Thermostat display:
 - a. Actual room temperature.
 - b. Programmed temperature.
 - c. System mode indication: heating, cooling, fan auto, off, and on, auto or on, off.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that substrates are ready for installation of units and openings are as indicated on shop drawings.
- B. Verify that proper power supply is available and located correctly.
- C. Verify that proper fuel supply is available for connection.

3.02 INSTALLATION

- A. Install in accordance with manufacturer's instructions and requirements of authorities having jurisdiction.
- B. Install in accordance with NFPA 90A.
- C. Install gas fired furnaces in accordance with NFPA 54.
- D. Provide vent connections in accordance with NFPA 211.
- E. Pipe drain from humidifier to nearest floor drain.

END OF SECTION

SECTION 23-6215
AIR COOLED CONDENSING UNITS

PART 1 GENERAL**1.01 REFERENCE STANDARDS**

- A. ASHRAE Std 15 - Safety Standard for Refrigeration Systems; American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.; 2010 (ANSI/ASHRAE Std 15).
- B. ASHRAE Std 23.1 - Methods of Testing for Rating Positive Displacement Refrigerant Compressors and Condensing Units; American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.; 2010.
- C. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum); National Electrical Manufacturers Association; 2008.

1.02 SUBMITTALS

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide rated capacities, weights specialties and accessories, electrical nameplate data, and wiring diagrams. Include equipment served by condensing units in submittal, or submit at same time, to ensure capacities are complementary.
- C. Shop Drawings: Indicate components, assembly, dimensions, weights and loadings, required clearances, and location and size of field connections. Include schematic layouts showing condensing units, cooling coils, refrigerant piping, and accessories required for complete system.
- D. Manufacturer's Instructions: Submit manufacturer's complete installation instructions.
- E. Operation and Maintenance Data: Include start-up instructions, maintenance instructions, parts lists, controls, and accessories.
- F. Warranty: Submit manufacturer's warranty and ensure forms have been filled out in Owner's name and registered with manufacturer.
- G. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. See Section 01600 - Product Requirements, for additional provisions.
 - 2. Extra Lubricating Oil: One complete change.

1.03 QUALITY ASSURANCE

- A. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories Inc. as suitable for the purpose specified and indicated.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Comply with manufacturer's installation instructions for rigging, unloading, and transporting units.

1.05 WARRANTY

- A. See Section 01780 - Closeout Submittals, for additional warranty requirements.
- B. Provide a five year warranty to include coverage for refrigerant compressors.

PART 2 PRODUCTS**2.01 MANUFACTURERS**

- A. See Mechanical Engineer's plans and notes for product selections (sheet 'M-1').
- B. Lennox
- C. Substitutions: See Section 01600 - Product Requirements.

PART 3 EXECUTION**3.01 INSTALLATION**

- A. Install in accordance with manufacturer's installation instructions.
- B. Complete structural, mechanical, and electrical connections in accordance with manufacturer's installation instructions.
- C. Provide for connection to electrical service. Refer to Section 16155.

- D. Install units on concrete base as recommended by manufacturer. Refer to Section 03300.
- E. Provide connection to refrigeration piping system and evaporators. Comply with ASHRAE Std 15.

3.02 SYSTEM STARTUP

- A. Supply initial charge of refrigerant and oil for each refrigeration system. Replace losses of oil or refrigerant prior to end of correction period.
- B. Charge system with refrigerant and test entire system for leaks after completion of installation. Repair leaks, put system into operation, and test equipment performance.
- C. Shut-down system if initial start-up and testing takes place in winter and machines are to remain inoperative. Repeat start-up and testing operation at beginning of first cooling season.
- D. Provide cooling season start-up, and winter season shut-down for first year of operation.
- E. Inspect and test for refrigerant leaks every 90 days during first year of operation.

END OF SECTION

SECTION 26-0001
DIVISION 26 - ELECTRICAL

SECTION 26-0518
BUILDING WIRE AND CABLE

PART 1 GENERAL**1.01 SECTION INCLUDES**

- A. Single conductor building wire.
- B. Metal-clad cable.
- C. Wiring connectors.
- D. Electrical tape.

1.02 REFERENCE STANDARDS

- A. ASTM B3 - Standard Specification for Soft or Annealed Copper Wire; 2001 (Reapproved 2007).
- B. ASTM B33 - Standard Specification for Tin-Coated Soft or Annealed Copper Wire for Electrical Purposes; 2010.
- C. ASTM B787/B787M - Standard Specification for 19 Wire Combination Unilay-Stranded Copper Conductors for Subsequent Insulation; 2004 (Reapproved 2009).
- D. ASTM D3005 - Standard Specification for Low-Temperature Resistant Vinyl Chloride Plastic Pressure-Sensitive Electrical Insulating Tape; 2010.
- E. NECA 1 - Standard for Good Workmanship in Electrical Construction; National Electrical Contractors Association; 2010.
- F. NEMA WC 70 - Power Cables Rated 2000 Volts or Less for the Distribution of Electrical Energy; National Electrical Manufacturers Association; 2009 (ANSI/NEMA WC 70/ICEA S-95-658).
- G. NETA STD ATS - Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems; International Electrical Testing Association; 2009.
- H. NFPA 70 - National Electrical Code; National Fire Protection Association; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- I. UL 44 - Thermoset-Insulated Wires and Cables; Current Edition, Including All Revisions.
- J. UL 83 - Thermoplastic-Insulated Wires and Cables; Current Edition, Including All Revisions.
- K. UL 486A-486B - Wire Connectors; Current Edition, Including All Revisions.
- L. UL 486C - Splicing Wire Connectors; Current Edition, Including All Revisions.
- M. UL 486D - Sealed Wire Connector Systems; Current Edition, Including All Revisions.
- N. UL 510 - Polyvinyl Chloride, Polyethylene, and Rubber Insulating Tape; Current Edition, Including All Revisions.
- O. UL 854 - Service-Entrance Cables; Current Edition, Including All Revisions.
- P. UL 1569 - Metal-Clad Cables; Current Edition, Including All Revisions.

1.03 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 1. Coordinate sizes of raceways, boxes, and equipment enclosures installed under other sections with the actual conductors to be installed, including adjustments for conductor sizes increased for voltage drop.
 2. Coordinate with electrical equipment installed under other sections to provide terminations suitable for use with the conductors to be installed.
 3. Notify Architect of any conflicts with or deviations from the contract documents. Obtain direction before proceeding with work.

1.04 SUBMITTALS

- A. Product Data: Provide manufacturer's standard catalog pages and data sheets for conductors and cables, including detailed information on materials, construction, ratings, listings, and available sizes, configurations, and stranding.

- B. Manufacturer's Installation Instructions: Indicate application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, and installation of product.
- C. Project Record Documents: Record actual installed circuiting arrangements. Record actual routing for underground circuits.

1.05 QUALITY ASSURANCE

- A. Conform to requirements of NFPA 70.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Receive, inspect, handle, and store conductors and cables in accordance with manufacturer's instructions.

1.07 FIELD CONDITIONS

- A. Do not install or otherwise handle thermoplastic-insulated conductors at temperatures lower than 14 degrees F, unless otherwise permitted by manufacturer's instructions. When installation below this temperature is unavoidable, notify Architect and obtain direction before proceeding with work.

PART 2 PRODUCTS

2.01 CONDUCTOR AND CABLE APPLICATIONS

- A. Do not use conductors and cables for applications other than as permitted by NFPA 70 and product listing.
- B. Nonmetallic-sheathed cable is not permitted.

2.02 ALL CONDUCTORS AND CABLES

- A. Provide products that comply with requirements of NFPA 70.
- B. Provide products listed and classified by Underwriters Laboratories Inc. as suitable for the purpose indicated.
- C. Provide new conductors and cables manufactured not more than one year prior to installation.
- D. Unless specifically indicated to be excluded, provide all required conduit, boxes, wiring, connectors, etc. as required for a complete operating system.
- E. Comply with NEMA WC 70.
- F. Thermoplastic-Insulated Conductors and Cables: Listed and labeled as complying with UL 83.
- G. Thermoset-Insulated Conductors and Cables: Listed and labeled as complying with UL 44.
- H. Conductor Material:
 - 1. Provide copper conductors except where aluminum conductors are specifically indicated. Substitution of aluminum conductors for copper is not permitted. Conductor sizes indicated are based on copper unless specifically indicated as aluminum. Conductors designated with the abbreviation "AL" indicate aluminum.
 - 2. Copper Conductors: Soft drawn annealed, 98 percent conductivity, uncoated copper conductors complying with ASTM B3, ASTM B8, or ASTM B787/B787M unless otherwise indicated.
 - 3. Tinned Copper Conductors: Comply with ASTM B33.
- I. Where conductor size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.
- J. Conductor Color Coding:
 - 1. Color code conductors as indicated unless otherwise required by the authority having jurisdiction. Maintain consistent color coding throughout project.
 - 2. Color Coding Method: Integrally colored insulation.
 - a. Conductors size 4 AWG and larger may have black insulation color coded using vinyl color coding electrical tape.
 - 3. Color Code:
 - a. 240/120 V, 1 Phase, 3 Wire System:
 - 1) Phase A: Black.
 - 2) Phase B: Red.

- 3) Neutral/Grounded: White.
- b. Equipment Ground, All Systems: Green.
- c. Travelers for 3-Way and 4-Way Switching: Pink.
- d. For control circuits, comply with manufacturer's recommended color code.

2.03 SINGLE CONDUCTOR BUILDING WIRE

- A. Description: Single conductor insulated wire.
- B. Conductor Stranding:
 1. Feeders and Branch Circuits:
 - a. Size 10 AWG and Smaller: Solid.
 - b. Size 8 AWG and Larger: Stranded.
 2. Control Circuits: Stranded.
- C. Insulation:
 1. Copper Building Wire: Type THHN/THWN or THHN/THWN-2, except as indicated below.
 - a. Size 4 AWG and Larger: Type XHHW-2.
 - b. Installed Underground: Type XHHW-2.
 - c. Fixture Wiring Within Luminaires: Type TFFN/TFN for luminaires with labeled maximum temperature of 90 degrees C; Approved suitable type for luminaires with labeled maximum temperature greater than 90 degrees C.

2.04 SERVICE ENTRANCE CABLE

- A. Service Entrance Cable for Above-Ground Use: NFPA 70, Type SE multiple-conductor cable listed and labeled as complying with UL 854, Style R.
- B. Service Entrance Cable for Underground Use: NFPA 70, Type USE single-conductor cable listed and labeled as complying with UL 854, Type USE-2, and with UL 44, Type RHH/RHW-2.
- C. Conductor Stranding: Stranded.
- D. Insulation Voltage Rating: 600 V.

2.05 METAL-CLAD CABLE

- A. Description: NFPA 70, Type MC cable listed and labeled as complying with UL 1569, and listed for use in classified firestop systems to be used.
- B. Conductor Stranding:
 1. Size 10 AWG and Smaller: Solid.
 2. Size 8 AWG and Larger: Stranded.
- C. Insulation Voltage Rating: 600 V.
- D. Insulation: Type as specified by engineer.
- E. Grounding: Full-size integral equipment grounding conductor.
- F. Armor: Steel, interlocked tape.
- G. Provide PVC jacket applied over cable armor where indicated or required for environment of installed location.

2.06 WIRING CONNECTORS

- A. Description: Wiring connectors appropriate for the application, suitable for use with the conductors to be connected, and listed as complying with UL 486A-486B or UL 486C as applicable.

2.07 WIRING ACCESSORIES

- A. Electrical Tape:
 1. Vinyl Color Coding Electrical Tape: Integrally colored to match color code indicated; listed as complying with UL 510; minimum thickness of 7 mil; resistant to abrasion, corrosion, and sunlight; suitable for continuous temperature environment up to 221 degrees F.
 2. Vinyl Insulating Electrical Tape: Complying with ASTM D3005 and listed as complying with UL 510; minimum thickness of 7 mil; resistant to abrasion, corrosion, and sunlight; conformable for application down to 0 degrees F and suitable for continuous temperature environment up to 221 degrees F.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that interior of building has been protected from weather.
- B. Verify that work likely to damage wire and cable has been completed.
- C. Verify that raceways, boxes, and equipment enclosures are installed and are properly sized to accommodate conductors and cables in accordance with NFPA 70.
- D. Verify that field measurements are as shown on the drawings.
- E. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

- A. Circuiting Requirements:
 1. Unless dimensioned, circuit routing indicated is diagrammatic.
 2. When circuit destination is indicated and routing is not shown, determine exact routing required.
 3. Arrange circuiting to minimize splices.
 4. Include circuit lengths required to install connected devices within 10 ft of location shown.
 5. Maintain separation of Class 1, Class 2, and Class 3 remote-control, signaling, and power-limited circuits in accordance with NFPA 70.
 6. Maintain separation of wiring for emergency systems in accordance with NFPA 70.
- B. Install products in accordance with manufacturer's instructions.
- C. Install conductors and cable in a neat and workmanlike manner in accordance with NECA 1.
- D. Exposed Cable Installation (only where specifically permitted):
 1. Route cables parallel or perpendicular to building structural members and surfaces.
 2. Protect cables from physical damage.
- E. Secure and support conductors and cables in accordance with NFPA 70 using suitable supports and methods approved by the authority having jurisdiction. Provide independent support from building structure. Do not provide support from raceways, piping, ductwork, or other systems.
 1. Installation Above Suspended Ceilings: Do not provide support from ceiling support system. Do not provide support from ceiling grid or allow conductors and cables to lay on ceiling tiles.
 2. Installation in Vertical Raceways: Provide supports where vertical rise exceeds permissible limits.
- F. Terminate cables using suitable fittings.
 1. Metal-Clad Cable (Type MC):
 - a. Use listed fittings.
 - b. Cut cable armor only using specialized tools to prevent damaging conductors or insulation. Do not use hacksaw or wire cutters to cut armor.
- G. Install conductors with a minimum of 12 inches of slack at each outlet.
- H. Where conductors are installed in enclosures for future termination by others, provide a minimum of 5 feet of slack.
- I. Neatly train and bundle conductors inside boxes, wireways, panelboards and other equipment enclosures.
- J. Make wiring connections using specified wiring connectors.
 1. Make splices and taps only in accessible boxes. Do not pull splices into raceways or make splices in conduit bodies or wiring gutters.
 2. Remove appropriate amount of conductor insulation for making connections without cutting, nicking or damaging conductors.
 3. Do not remove conductor strands to facilitate insertion into connector.
 4. Clean contact surfaces on conductors and connectors to suitable remove corrosion, oxides, and other contaminates. Do not use wire brush on plated connector surfaces.
- K. Insulate splices and taps that are made with uninsulated connectors using methods suitable for the application, with insulation and mechanical strength at least equivalent to unspliced conductors.
 1. Dry Locations: Use insulating covers specifically designed for the connectors, electrical tape, or heat shrink tubing.

2. Damp Locations: Use insulating covers specifically designed for the connectors, electrical tape, or heat shrink tubing.
3. Wet Locations: Use heat shrink tubing.

L. Insulate ends of spare conductors using vinyl insulating electrical tape.

M. Install firestopping to preserve fire resistance rating of partitions and other elements, using materials and methods specified in Section 07840.

N. Unless specifically indicated to be excluded, provide final connections to all equipment and devices, including those furnished by others, as required for a complete operating system.

3.03 FIELD QUALITY CONTROL

- A. Perform inspection, testing, and adjusting in accordance with Section 01400.
- B. Inspect and test in accordance with NETA STD ATS, except Section 4.
- C. Perform inspections and tests listed in NETA STD ATS, Section 7.3.2. The insulation resistance test is required for all conductors. The resistance test for parallel conductors listed as optional is required.
- D. Correct deficiencies and replace damaged or defective conductors and cables.

END OF SECTION

SECTION 26-0537
BOXES

PART 1 GENERAL**1.01 SECTION INCLUDES**

- A. Outlet and device boxes up to 100 cubic inches, including those used as junction and pull boxes.

1.02 REFERENCE STANDARDS

- A. NECA 1 - Standard for Good Workmanship in Electrical Construction; National Electrical Contractors Association; 2010.
- B. NECA 130 - Standard for Installing and Maintaining Wiring Devices; National Electrical Contractors Association; 2010.
- C. NEMA FB 1 - Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit, Electrical Metallic Tubing, and Cable; National Electrical Manufacturers Association; 2012 (ANSI/NEMA FB 1).
- D. NEMA OS 1 - Sheet-Steel Outlet Boxes, Device Boxes, Covers, and Box Supports; National Electrical Manufacturers Association; 2008 (Revised 2010) (ANSI/NEMA OS 1).
- E. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum); National Electrical Manufacturers Association; 2008.
- F. NFPA 70 - National Electrical Code; National Fire Protection Association; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- G. UL 50 - Enclosures for Electrical Equipment, Non-Environmental Considerations; Current Edition, Including All Revisions.
- H. UL 50E - Enclosures for Electrical Equipment, Environmental Considerations; Current Edition, Including All Revisions.
- I. UL 508A - Industrial Control Panels; Current Edition, Including All Revisions.
- J. UL 514A - Metallic Outlet Boxes; Current Edition, Including All Revisions.

1.03 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 1. Coordinate the work with other trades to avoid placement of ductwork, piping, equipment, or other potential obstructions within the dedicated equipment spaces and working clearances for electrical equipment required by NFPA 70.
 2. Coordinate arrangement of electrical equipment with the dimensions and clearance requirements of the actual equipment to be installed.
 3. Coordinate minimum sizes of boxes with the actual installed arrangement of conductors, clamps, support fittings, and devices, calculated according to NFPA 70.
 4. Coordinate minimum sizes of pull boxes with the actual installed arrangement of connected conduits, calculated according to NFPA 70.
 5. Coordinate the placement of boxes with millwork, furniture, devices, equipment, etc. installed under other sections or by others.
 6. Coordinate the work with other trades to preserve insulation integrity.
 7. Coordinate the work with other trades to provide walls suitable for installation of flush-mounted boxes where indicated.
 8. Notify Architect of any conflicts with or deviations from the contract documents. Obtain direction before proceeding with work.

1.04 SUBMITTALS

- A. Product Data: Provide manufacturer's standard catalog pages and data sheets for outlet and device boxes, junction and pull boxes, cabinets and enclosures, and floor boxes.
 1. Underground Handhole Enclosures: Include reports for load testing in accordance with SCTE 77 certified by a professional engineer or an independent testing agency upon request.
- B. Samples:
 1. Floor Boxes: Provide one sample(s) of each floor box proposed for substitution upon request.

- C. Manufacturer's Installation Instructions: Indicate application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, and installation of product.
- D. Project Record Documents: Record actual locations for outlet and device boxes, pull boxes, cabinets and enclosures, floor boxes, and underground handhole enclosures.

1.05 QUALITY ASSURANCE

- A. Conform to requirements of NFPA 70.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Receive, inspect, handle, and store products in accordance with manufacturer's instructions.

PART 2 PRODUCTS

2.01 BOXES

- A. General Requirements:
 1. Do not use boxes and associated accessories for applications other than as permitted by NFPA 70 and product listing.
 2. Provide all boxes, fittings, supports, and accessories required for a complete raceway system and to accommodate devices and equipment to be installed.
 3. Provide products listed, classified, and labeled by Underwriter's Laboratories Inc. (UL) or testing firm acceptable to authority having jurisdiction as suitable for the purpose indicated.
 4. Where box size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.
 5. Provide grounding terminals within boxes where equipment grounding conductors terminate.
- B. Outlet and Device Boxes Up to 100 cubic inches, Including Those Used as Junction and Pull Boxes:
 1. Use sheet-steel boxes for dry locations unless otherwise indicated or required.
 2. Use cast iron boxes or cast aluminum boxes for damp or wet locations unless otherwise indicated or required; furnish with compatible weatherproof gasketed covers.
 3. Use suitable concrete type boxes where flush-mounted in concrete.
 4. Use raised covers suitable for the type of wall construction and device configuration where required.
 5. Use shallow boxes where required by the type of wall construction.
 6. Do not use "through-wall" boxes designed for access from both sides of wall.
 7. Sheet-Steel Boxes: Comply with NEMA OS 1, and list and label as complying with UL 514A.
 8. Cast Metal Boxes: Comply with NEMA FB 1, and list and label as complying with UL 514A; furnish with threaded hubs.
 9. Boxes for Supporting Luminaires and Ceiling Fans: Listed as suitable for the type and weight of load to be supported; furnished with fixture stud to accommodate mounting of luminaire where required.
 10. Boxes for Ganged Devices: Use multigang boxes of single-piece construction. Do not use field-connected gangable boxes.
 11. Wall Plates: Comply with Section 26-2725.
- C. Underground Handhole Enclosures:
 1. Description: In-ground, open bottom boxes furnished with flush, non-skid covers with legend indicating type of service and stainless steel tamper resistant cover bolts.
 2. Size: As indicated on drawings.
 3. Depth: As required to extend below frost line to prevent frost upheaval, but not less than 12 inches.
 4. Applications:
 - a. Sidewalks and Landscaped Areas Subject Only to Occasional Nondeliberate Vehicular Traffic: Use polymer concrete enclosures, with minimum SCTE 77, Tier 8 load rating.
 - b. Parking Lots, in Areas Subject Only To Occasional Nondeliberate Vehicular Traffic: Use polymer concrete enclosures, with minimum SCTE 77, Tier 15 load rating.
 - c. Do not use polymer concrete enclosures in areas subject to deliberate vehicular traffic.
 5. Polymer Concrete Underground Handhole Enclosures: Comply with SCTE 77.

PART 3 EXECUTION**3.01 EXAMINATION**

- A. Verify that field measurements are as shown on drawings.
- B. Verify that mounting surfaces are ready to receive boxes.
- C. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Perform work in a neat and workmanlike manner in accordance with NECA 1 and, where applicable, NECA 130, including mounting heights specified in those standards where mounting heights are not indicated.
- C. Arrange equipment to provide minimum clearances in accordance with manufacturer's instructions and NFPA 70.
- D. Unless otherwise indicated, provide separate boxes for line voltage and low voltage systems.
- E. Flush-mount boxes in finished areas unless specifically indicated to be surface-mounted.
- F. Unless otherwise indicated, boxes may be surface-mounted where exposed conduits are indicated or permitted.
- G. Box Locations:
 - 1. Locate boxes to be accessible. Provide access panels in accordance with Section 08310 as required where approved by the Architect.
 - 2. Unless dimensioned, box locations indicated are approximate.
 - 3. Locate boxes as required for devices installed under other sections or by others.
 - 4. Locate boxes so that wall plates do not span different building finishes.
 - 5. Unless otherwise indicated, where multiple outlet boxes are installed at the same location at different mounting heights, install along a common vertical center line.
 - 6. Do not install flush-mounted boxes on opposite sides of walls back-to-back. Provide minimum 6 inches horizontal separation unless otherwise indicated.
 - 7. Locate junction and pull boxes in the following areas, unless otherwise indicated or approved by the Architect:
 - a. Concealed above accessible suspended ceilings.
 - b. Within joists in areas with no ceiling.
 - c. Electrical rooms.
 - d. Mechanical equipment rooms.
- H. Box Supports:
 - 1. Secure and support boxes in accordance with NFPA 70 and Section 16070 using suitable supports and methods approved by the authority having jurisdiction.
 - 2. Provide independent support from building structure except for cast metal boxes (other than boxes used for fixture support) supported by threaded conduit connections in accordance with NFPA 70. Do not provide support from piping, ductwork, or other systems.
- I. Install boxes plumb and level.
- J. Flush-Mounted Boxes:
 - 1. Install boxes in noncombustible materials such as concrete, tile, gypsum, plaster, etc. so that front edge of box or associated raised cover is not set back from finished surface more than 1/4 inch or does not project beyond finished surface.
 - 2. Install boxes in combustible materials such as wood so that front edge of box or associated raised cover is flush with finished surface.
 - 3. Repair rough openings around boxes in noncombustible materials such as concrete, tile, gypsum, plaster, etc. so that there are no gaps or open spaces greater than 1/8 inch at the edge of the box.
- K. Install boxes as required to preserve insulation integrity.
- L. Metallic Floor Boxes: Install box level at the proper elevation to be flush with finished floor.
- M. Underground Handhole Enclosures:

1. Install enclosure on gravel base, minimum 6 inches deep.
2. Flush-mount enclosures located in concrete or paved areas.
3. Mount enclosures located in landscaped areas with top at 1 inch above finished grade.
4. Provide cast-in-place concrete collar constructed in accordance with Section 03300, minimum 10 inches wide by 12 inches deep, around enclosures that are not located in concrete areas.
5. Install additional bracing inside enclosures in accordance with manufacturer's instructions to minimize box sidewall deflections during backfilling. Backfill with cover bolted in place.

- N. Install permanent barrier between ganged wiring devices when voltage between adjacent devices exceeds 300 V.
- O. Install firestopping to preserve fire resistance rating of partitions and other elements, using materials and methods specified in Section 07840.
- P. Close unused box openings.
- Q. Install blank wall plates on junction boxes and on outlet boxes with no devices or equipment installed or designated for future use.
- R. Provide grounding and bonding in accordance with other section(s) of this project manual.

3.03 CLEANING

- A. Clean interior of boxes to remove dirt, debris, plaster and other foreign material.

3.04 PROTECTION

- A. Immediately after installation, protect boxes from entry of moisture and foreign material until ready for installation of conductors.

END OF SECTION

SECTION 26-2725
WIRING DEVICES

PART 1 GENERAL**1.01 SECTION INCLUDES**

- A. Wall switches.
- B. Fan speed controllers.
- C. Receptacles.
- D. Wall plates.

1.02 REFERENCE STANDARDS

- A. FS W-S-896 - Switches, Toggle (Toggle and Lock), Flush-mounted (General Specification); Federal Specification; Revision F, 1999.
- B. NECA 1 - Standard for Good Workmanship in Electrical Construction; National Electrical Contractors Association; 2010.
- C. NEMA WD 1 - General Color Requirements for Wiring Devices; National Electrical Manufacturers Association; 1999 (R 2005).
- D. NEMA WD 6 - Wiring Device -- Dimensional Requirements; National Electrical Manufacturers Association; 2002 (R2008).
- E. NFPA 70 - National Electrical Code; National Fire Protection Association; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- F. UL 20 - General-Use Snap Switches; Current Edition, Including All Revisions.
- G. UL 498 - Attachment Plugs and Receptacles; Current Edition, Including All Revisions.
- H. UL 514D - Cover Plates for Flush-Mounted Wiring Devices; Current Edition, Including All Revisions.
- I. UL 943 - Ground-Fault Circuit-Interrupters; Current Edition, Including All Revisions.

1.03 ADMINISTRATIVE REQUIREMENTS

- A. Coordinate the placement of outlet boxes with millwork, furniture, equipment, etc. installed under other sections or by others.
- B. Coordinate wiring device ratings and configurations with the electrical requirements of actual equipment to be installed.
- C. Coordinate the placement of outlet boxes for wall switches with actual installed door swings.
- D. Coordinate the installation and preparation of uneven surfaces, such as split face block, to provide suitable surface for installation of wiring devices.
- E. Notify Architect of any conflicts or deviations from the contract documents to obtain direction prior to proceeding with work.

1.04 SUBMITTALS

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide manufacturer's catalog information showing dimensions, colors, and configurations.
- C. Operation and Maintenance Data:
 1. GFI Receptacles: Include information on status indicators and testing procedures and intervals.
- D. Project Record Documents: Record actual installed locations of wiring devices.
- E. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 1. See Section 01600 - Product Requirements, for additional provisions.
 2. Extra Wall Plates: One of each style, size, and finish.

1.05 QUALITY ASSURANCE

- A. Conform to requirements of NFPA 70.

- B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

1.06 DELIVERY, STORAGE, AND PROTECTION

- A. Store in a clean, dry space in original manufacturer's packaging until ready for installation.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Hubbell Incorporated: www.hubbell-wiring.com.
- B. Leviton Manufacturing Company, Inc: www.leviton.com.
- C. Lutron Electronics Company, Inc: www.lutron.com.
- D. Pass & Seymour, a brand of Legrand North America, Inc: www.legrand.us
- E. Substitutions: See Section 01600 - Product Requirements.
- F. Source Limitations: Where possible, for each type of wiring device furnish products produced by a single manufacturer and obtained from a single supplier.

2.02 APPLICATIONS

- A. Provide wiring devices suitable for intended use and with ratings adequate for load served.
- B. For single receptacles installed on an individual branch circuit, provide receptacle with ampere rating not less than that of the branch circuit.
- C. Provide weather resistant GFI receptacles with specified weatherproof covers for all receptacles installed outdoors or in damp or wet locations.
- D. Provide GFI protection for all receptacles installed within 6 feet of sinks.
- E. Unless noted otherwise, do not use combination switch/receptacle devices.

2.03 ALL WIRING DEVICES

- A. Provide products listed and classified by Underwriters Laboratories Inc. as suitable for the purpose specified and indicated.
- B. Finishes:
 - 1. All Wiring Devices: Beige with beige nylon wall plate unless otherwise indicated.

2.04 WALL SWITCHES

- A. All Wall Switches: AC only, quiet operating, general-use snap switches with silver alloy contacts, complying with NEMA WD 1 and NEMA WD 6, and listed as complying with UL 20 and where applicable, FS W-S-896; types as indicated on the drawings.
 - 1. Wiring Provisions: Terminal screws for side wiring and screw actuated binding clamp for back wiring with separate ground terminal screw.
- B. Standard Wall Switches: Commercial specification grade, 20 A, 120/277 V with standard toggle type switch actuator and maintained contacts; single pole single throw, double pole single throw, three way, or four way as indicated on the drawings.

2.05 FAN SPEED CONTROLLERS

- A. Description: 120 V AC, solid-state, full-range variable speed, slide control type with separate on/off switch, with integral radio frequency interference filtering, fan hum elimination circuitry, power failure preset memory, complying with NEMA WD 1 and NEMA WD 6, and listed as complying with UL 1917.
 - 1. Current Rating to control the load indicated in the plans.

2.06 RECEPTACLES

- A. All Receptacles: Self-grounding, complying with NEMA WD 1 and NEMA WD 6, and listed as complying with UL 498, and where applicable, FS W-C-596; types as indicated on the drawings.
 - 1. Wiring Provisions: Terminal screws for side wiring or screw actuated binding clamp for back wiring with separate ground terminal screw.
 - 2. NEMA configurations specified are according to NEMA WD 6.
- B. Convenience Receptacles:

1. Standard Convenience Receptacles: Commercial specification grade, 20A, 125V, NEMA 5-20R; single or duplex as indicated on the drawings.
- C. GFI Receptacles:
 1. All GFI Receptacles: Provide with feed-through protection, light to indicate ground fault tripped condition and loss of protection, and list as complying with UL 943, class A.
 - a. Provide test and reset buttons of same color as device.
 2. Standard GFI Receptacles: Commercial specification grade, duplex, 20A, 125V, NEMA 5-20R, rectangular decorator style.

2.07 WALL PLATES

- A. All Wall Plates: Comply with UL 514D.
 1. Configuration: One piece cover as required for quantity and types of corresponding wiring devices.
 2. Size: Standard; .
 3. Screws: Metal with slotted heads finished to match wall plate finish.
- B. Nylon Wall Plates: Smooth finish, high-impact thermoplastic.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as shown on the drawings.
- B. Verify that outlet boxes are installed in proper locations and at proper mounting heights and are properly sized to accommodate devices and conductors in accordance with NFPA 70.
- C. Verify that wall openings are neatly cut and will be completely covered by wall plates.
- D. Verify that final surface finishes are complete, including painting.
- E. Verify that floor boxes are adjusted properly.
- F. Verify that branch circuit wiring installation is completed, tested, and ready for connection to wiring devices.
- G. Verify that conditions are satisfactory for installation prior to starting work.

3.02 PREPARATION

- A. Provide extension rings to bring outlet boxes flush with finished surface.
- B. Clean dirt, debris, plaster, and other foreign materials from outlet boxes.

3.03 INSTALLATION

- A. Perform work in a neat and workmanlike manner in accordance with NECA 1 and, where applicable, NECA 130, including mounting heights specified in those standards unless otherwise indicated.
- B. Coordinate locations of outlet boxes provided under Section 16138 as required for installation of wiring devices provided under this section.
 1. Mounting Heights: Unless otherwise indicated, as follows:
 - a. Wall Switches: 48 inches above finished floor.
 - b. Receptacles: 18 inches above finished floor or 6 inches above counter.
 2. Orient outlet boxes for vertical installation of wiring devices unless otherwise indicated.
 3. Where multiple receptacles, wall switches, or wall dimmers are installed at the same location and at the same mounting height, gang devices together under a common wall plate.
 4. Locate wall switches on strike side of door with edge of wall plate 3 inches from edge of door frame. Where locations are indicated otherwise, notify Architect to obtain direction prior to proceeding with work.
- C. Install wiring devices in accordance with manufacturer's instructions.
- D. Install permanent barrier between ganged wiring devices when voltage between adjacent devices exceeds 300 V.
- E. Where required, connect wiring devices using pigtails not less than 6 inches long. Do not connect more than one conductor to wiring device terminals.

- F. Connect wiring devices by wrapping conductor clockwise 3/4 turn around screw terminal and tightening to proper torque specified by the manufacturer. Where present, do not use push-in pressure terminals that do not rely on screw-actuated binding.
- G. Provide GFI receptacles with integral GFI protection at each location indicated. Do not use feed-through wiring to protect downstream devices.
- H. Install wiring devices plumb and level with mounting yoke held rigidly in place.
- I. Install wall switches with OFF position down.
- J. Install vertically mounted receptacles with grounding pole on top and horizontally mounted receptacles with grounding pole on left.
- K. Install wall plates to fit completely flush to wall with no gaps and rough opening completely covered without strain on wall plate. Repair or reinstall improperly installed outlet boxes or improperly sized rough openings. Do not use oversized wall plates in lieu of meeting this requirement.
- L. Install blank wall plates on junction boxes and on outlet boxes with no wiring devices installed or designated for future use.

3.04 FIELD QUALITY CONTROL

- A. Perform field inspection, testing, and adjusting in accordance with Section 01400.
- B. Inspect each wiring device for damage and defects.
- C. Operate each wall switch, wall dimmer, and fan speed controller with circuit energized to verify proper operation.
- D. Test each receptacle to verify operation and proper polarity.
- E. Test each GFCI receptacle for proper tripping operation according to manufacturer's instructions.
- F. Correct wiring deficiencies and replace damaged or defective wiring devices.

3.05 ADJUSTING

- A. Adjust devices and wall plates to be flush and level.
- B. Adjust presets for wall dimmers according to manufacturer's instructions as directed by Architect.

3.06 CLEANING

- A. Clean exposed surfaces to remove dirt, paint, or other foreign material and restore to match original factory finish.

END OF SECTION

SECTION 26-5100
INTERIOR LIGHTING

PART 1 GENERAL**1.01 SECTION INCLUDES**

- A. Interior luminaires.
- B. Emergency lighting units.
- C. Exit signs.
- D. Ballasts and drivers.
- E. Lamps.

1.02 REFERENCE STANDARDS

- A. 47 CFR 15 - Radio Frequency Devices; Code of Federal Regulations.
- B. ANSI C82.11 - American National Standard for Lamp Ballasts - High Frequency Fluorescent Lamp Ballasts - Supplements.
- C. IEEE C62.41.2 - Recommended Practice on Characterization of Surges in Low-Voltage (1000 V and less) AC Power Circuits; Institute of Electrical and Electronic Engineers.
- D. NECA 1 - Standard for Good Workmanship in Electrical Construction; National Electrical Contractors Association.
- E. NECA/IESNA 500 - Standard for Installing Indoor Commercial Lighting Systems; National Electrical Contractors Association.
- F. NECA/IESNA 502 - Standard for Installing Industrial Lighting Systems; National Electrical Contractors Association.
- G. NFPA 70 - National Electrical Code; National Fire Protection Association.
- H. NFPA 101 - Life Safety Code; National Fire Protection Association.
- I. UL 924 - Emergency Lighting and Power Equipment.
- J. UL 935 - Fluorescent-Lamp Ballasts.
- K. UL 1598 - Luminaires.

1.03 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 1. Coordinate the installation of luminaires with mounting surfaces installed under other sections or by others. Coordinate the work with placement of supports, anchors, etc. required for mounting. Coordinate compatibility of luminaires and associated trims with mounting surfaces at installed locations.
 2. Coordinate the placement of luminaires with structural members, ductwork, piping, equipment, diffusers, fire suppression system components, and other potential conflicts installed under other sections or by others.
 3. Coordinate the placement of exit signs with furniture, equipment, signage or other potential obstructions to visibility installed under other sections or by others.
 4. Notify Architect of any conflicts or deviations from the contract documents to obtain direction prior to proceeding with work.

1.04 SUBMITTALS

- A. Product Data: Provide manufacturer's standard catalog pages and data sheets including detailed information on luminaire construction, dimensions, ratings, finishes, mounting requirements, listings, service conditions, photometric performance, installed accessories, and ceiling compatibility; include model number nomenclature clearly marked with all proposed features.
- B. Manufacturer's Installation Instructions: Indicate application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, and installation of product.

- C. Operation and Maintenance Data: Instructions for each product including information on replacement parts.
- D. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 1. See Section 01-6000 - Product Requirements, for additional provisions.
 2. Extra Lenses and Louvers: Two percent of total quantity installed for each type, but not less than one of each type.
 3. Extra Lamps: Five percent of total quantity installed for each type, but not less than two of each type.
- E. Project Record Documents: Record actual connections and locations of luminaires and any associated remote components.

1.05 QUALITY ASSURANCE

- A. Conform to requirements of NFPA 70.

1.06 DELIVERY, STORAGE, AND PROTECTION

- A. Receive, handle, and store products according to NECA/IESNA 500 (commercial lighting) and manufacturer's written instructions.
- B. Keep products in original manufacturer's packaging and protect from damage until ready for installation.

1.07 FIELD CONDITIONS

- A. Maintain field conditions within manufacturer's required service conditions during and after installation.

1.08 WARRANTY

- A. See Section 01-7800 - Closeout Submittals, for additional warranty requirements.
- B. Provide two year manufacturer warranty for all linear fluorescent ballasts.
- C. Provide five year pro-rata warranty for batteries for emergency lighting units.
- D. Provide ten year pro-rata warranty for batteries for self-powered exit signs.

PART 2 PRODUCTS

2.01 SEE ELECTRICAL ENGINEER'S PLANS, SCHEDULES AND NOTES FOR PRODUCT SELECTIONS (DRAWING SHEET E-2).

2.02 LUMINAIRE TYPES

- A. Furnish products as indicated in luminaire schedule included on the drawings.
- B. Substitutions: See Section 01-6000 - Product Requirements, except where individual luminaire types are designated with substitutions not permitted.

2.03 LUMINAIRES

- A. Provide products that comply with requirements of NFPA 70.
- B. Provide products that are listed and labeled as complying with UL 1598, where applicable.
- C. Provide products listed, classified, and labeled as suitable for the purpose intended.
- D. Unless otherwise indicated, provide complete luminaires including lamp(s) and all sockets, ballasts, reflectors, lenses, housings and other components required to position, energize and protect the lamp and distribute the light.
- E. Unless specifically indicated to be excluded, provide all required conduit, boxes, wiring, connectors, hardware, supports, trims, accessories, etc. as necessary for a complete operating system.
- F. Provide products suitable to withstand normal handling, installation, and service without any damage, distortion, corrosion, fading, discoloring, etc.
- G. Fluorescent Luminaires:
 1. Provide ballast disconnecting means complying with NFPA 70 where required.

2.04 EMERGENCY LIGHTING UNITS

- A. Description: Emergency lighting units complying with NFPA 101 and all applicable state and local codes, and listed and labeled as complying with UL 924.

- B. Operation: Upon interruption of normal power source or brownout condition exceeding 20 percent voltage drop from nominal, solid-state control automatically switches connected lamps to integral battery power for minimum of 90 minutes of rated emergency illumination, and automatically recharges battery upon restoration of normal power source.
- C. Battery:
 - 1. Size battery to supply all connected lamps, including emergency remote heads where indicated.
- D. Diagnostics: Provide power status indicator light and accessible integral test switch to manually activate emergency operation.
- E. Provide low-voltage disconnect to prevent battery damage from deep discharge.
- F. Accessories:
 - 1. Provide compatible accessory mounting brackets where indicated or required to complete installation.
 - 2. Where indicated, provide emergency remote heads that are compatible with the emergency lighting unit they are connected to and suitable for the installed location.

2.05 EXIT SIGNS

- A. Description: Exit signs and similar signs for special purpose applications such as area of refuge/rescue assistance.
- B. Description: Internally illuminated exit signs with LEDs unless otherwise indicated; complying with NFPA 101 and all applicable state and local codes, and listed and labeled as complying with UL 924.
 - 1. Number of Faces: Single or double as indicated or as required for the installed location.
 - 2. Directional Arrows: As indicated or as required for the installed location.
- C. Self-Powered Exit Signs:
 - 1. Operation: Upon interruption of normal power source or brownout condition exceeding 20 percent voltage drop from nominal, solid-state control automatically switches connected lamps to integral battery power for minimum of 90 minutes of rated emergency illumination, and automatically recharges battery upon restoration of normal power source.
 - 2. Diagnostics: Provide power status indicator light and accessible integral test switch to manually activate emergency operation.
 - 3. Provide low-voltage disconnect to prevent battery damage from deep discharge.

2.06 BALLASTS AND DRIVERS

- A. Ballasts - General Requirements:
 - 1. Provide ballasts containing no polychlorinated biphenyls (PCBs).
 - 2. Minimum Efficiency/Efficacy: Provide ballasts complying with all current applicable federal and state ballast efficiency/efficacy standards.
- B. Fluorescent Ballasts:
 - 1. All Fluorescent Ballasts: Unless otherwise indicated, provide high frequency electronic ballasts complying with ANSI C82.11 and listed and labeled as complying with UL 935.
 - a. Input Voltage: Suitable for operation at voltage of connected source, with variation tolerance of plus or minus 10 percent.
 - b. Total Harmonic Distortion: Not greater than 20 percent.
 - c. Power Factor: Not less than 0.95.
 - d. Thermal Protection: Listed and labeled as UL Class P, with automatic reset for integral thermal protectors.
 - e. Sound Rating: Class A, suitable for average ambient noise level of 20 to 24 decibels.
 - f. Lamp Compatibility: Specifically designed for use with the specified lamp, with no visible flicker.
 - g. Lamp Operating Frequency: Greater than 20 kHz.
 - h. Lamp Current Crest Factor: Not greater than 1.7.
 - i. Provide automatic restart capability to restart replaced lamp(s) without requiring resetting of power.
 - j. Provide end of lamp life automatic shut down circuitry for T5 and smaller diameter lamp ballasts.

- k. Surge Tolerance: Capable of withstanding characteristic surges according to IEEE C62.41.2, location category A.
- l. Electromagnetic Interference/Radio Frequency Interference (EMI/RFI) Limits: Comply with FCC requirements of 47 CFR 15, for Class A, non-consumer application.
- m. Ballast Marking: Include wiring diagrams with lamp connections.

2.07 LAMPS

- A. Manufacturers:
 - 1. General Electric Company/GE Lighting: www.gelighting.com.
 - 2. Osram Sylvania: www.sylvania.com.
 - 3. Philips Lighting Company: www.lighting.philips.com.
 - 4. Substitutions: See Section 01-6000 - Product Requirements.
 - 5. Manufacturer Limitations: Where possible, provide lamps produced by a single manufacturer.
 - 6. Where a specific manufacturer or model is indicated elsewhere in the luminaire schedule or on the drawings, substitutions are not permitted unless explicitly indicated.
- B. Lamps - General Requirements:
 - 1. Unless explicitly excluded, provide new, compatible, operable lamps in each luminaire.
 - 2. Verify compatibility of specified lamps with luminaires to be installed. Where lamps are not specified, provide lamps per luminaire manufacturer's recommendations.
 - 3. Minimum Efficiency: Provide lamps complying with all current applicable federal and state lamp efficiency standards.
 - 4. Color Temperature Consistency: Unless otherwise indicated, for each type of lamp furnish products which are consistent in perceived color temperature. Replace lamps that are determined by the Architect to be inconsistent in perceived color temperature.
- C. Linear Fluorescent Lamps: Wattage and bulb type as indicated, with base type as required for luminaire.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as shown on the drawings.
- B. Verify that outlet boxes are installed in proper locations and at proper mounting heights and are properly sized to accommodate conductors in accordance with NFPA 70.
- C. Verify that suitable support frames are installed where required.
- D. Verify that branch circuit wiring installation is completed, tested, and ready for connection to luminaires.
- E. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

- A. Coordinate locations of outlet boxes provided under Section 26-0537 as required for installation of luminaires provided under this section.
- B. Install products according to manufacturer's instructions.
- C. Install luminaires securely, in a neat and workmanlike manner, as specified in NECA 1 (general workmanship), NECA 500 (commercial lighting), and NECA 502 (industrial lighting).
- D. Install luminaires plumb and square and aligned with building lines and with adjacent luminaires.
- E. Suspended Ceiling Mounted Luminaires:
 - 1. Do not use ceiling tiles to bear weight of luminaires.
 - 2. Do not use ceiling support system to bear weight of luminaires unless ceiling support system is certified as suitable to do so.
 - 3. Secure surface-mounted luminaires to ceiling support channels or framing members or to building structure.
 - 4. In addition to ceiling support wires, provide two galvanized steel safety wire(s), minimum 12 gage, connected from opposing corners of each recessed luminaire to building structure.
 - 5. See appropriate Division 9 section where suspended grid ceiling is specified for additional requirements.
- F. Recessed Luminaires:

1. Install trims tight to mounting surface with no visible light leakage.
2. Non-IC Rated Luminaires: Maintain required separation from insulation and combustible materials according to listing.

G. Install accessories furnished with each luminaire.

H. Bond products and metal accessories to branch circuit equipment grounding conductor.

I. Emergency Lighting Units:

1. Unless otherwise indicated, connect unit to unswitched power from same circuit feeding normal lighting in same room or area. Bypass local switches, contactors, or other lighting controls.

J. Exit Signs:

1. Unless otherwise indicated, connect unit to unswitched power from same circuit feeding normal lighting in same room or area. Bypass local switches, contactors, or other lighting controls.

K. Install lamps in each luminaire.

3.03 FIELD QUALITY CONTROL

- A. See Section 01-4000 - Quality Requirements, for additional requirements.
- B. Inspect each product for damage and defects.
- C. Operate each luminaire after installation and connection to verify proper operation.
- D. Test self-powered exit signs and emergency lighting units to verify proper operation upon loss of normal power supply.
- E. Correct wiring deficiencies and repair or replace damaged or defective products. Repair or replace excessively noisy ballasts as determined by Architect.

3.04 ADJUSTING

- A. Aim and position adjustable emergency lighting unit lamps to achieve optimum illumination of egress path as required or as directed by Architect or authority having jurisdiction.
- B. Exit Signs with Field-Selectable Directional Arrows: Set as indicated or as required to properly designate egress path as directed by Architect or authority having jurisdiction.

3.05 CLEANING

- A. Clean surfaces according to NECA 500 (commercial lighting), NECA 502 (industrial lighting), and manufacturer's instructions to remove dirt, fingerprints, paint, or other foreign material and restore finishes to match original factory finish.

3.06 CLOSEOUT ACTIVITIES

- A. See Section 01-7800 - Closeout Submittals, for closeout submittals.
- B. Demonstration: Demonstrate proper operation of luminaires to Architect, and correct deficiencies or make adjustments as directed.
- C. Just prior to Substantial Completion, replace all lamps that have failed .

3.07 PROTECTION

- A. Protect installed luminaires from subsequent construction operations.

END OF SECTION

TO OWNER:

PROJECT:

APPLICATION NO.:

Distribution to:

PERIOD TO:

 OWNER

PROJECT NOS.:

 ARCHITECT

FROM CONTRACTOR:

VIA ARCHITECT:

CONTRACT DATE:

 CONTRACTOR

CONTRACT FOR:

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 \$ _____
(Columns D + E on G703)b. ____% of Stored Material \$ _____
(Column F on G703)Total Retainage (Line 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 this 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 for. Initial all figures on this Application and on the Continuation Sheet that are changed to conform to 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.



CONTINUATION SHEET

AIA DOCUMENT G703 (Instructions on reverse side)

PAGE OF PAGES

AIA Document G702, APPLICATION AND CERTIFICATE 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.:

ITEM NO.	DESCRIPTION OF WORK	SCHEDULED VALUE	WORK COMPLETED		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)
			FROM PREVIOUS APPLICATION (D + E)	THIS PERIOD					

 AIA DOCUMENT G703 • CONTINUATION SHEET FOR G702 • 1992 EDITION • AIA® • ©1992 • THE AMERICAN INSTITUTE OF ARCHITECTS, 1735 NEW YORK AVENUE, N.W., WASHINGTON, D.C. 20006-5292 • WARNING: Unlicensed photocopying violates U.S. copyright laws and will subject the violator to legal prosecution.

CAUTION: You should use an original AIA document which has this caution printed in red. An original assures that changes will not be obscured as may occur when documents are reproduced.

Interior Remodeling of Ex'g Building-Phases 2&3 (Partial) for a New Jefferson County (Missouri) Emergency Management & Operations Center Herculaneum, MO

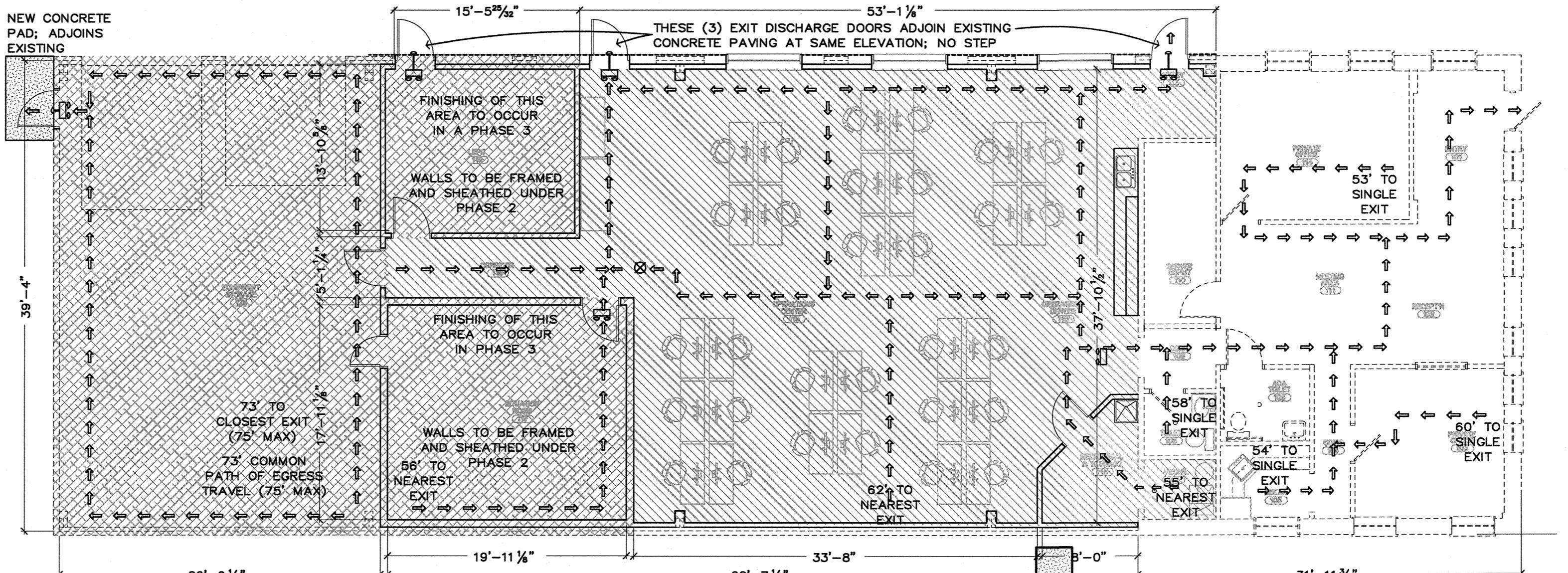
Public Works Project #: _____

List of Drawings:

- G-1 COVER, CODE REVIEW, OCCUPANCY/EXISTING
- A-1 EXISTING BUILDING & DEMOLITION PLAN
- A-2 NEW FLOOR PLANS; FLOOR FINISHES PLAN
- A-3 EXISTING & NEW REFLECTED CEILING PLANS
- A-4 BUILDING SECTIONS, ENLARGED PLAN, DETAILS
- A-5 DETAILS, EXTERIOR ELEVATION, DOOR SCHEDULE
- M-1 HVAC PLAN
- P-1 PLUMBING PLAN
- E-1 ELECTRICAL-POWER PLAN
- E-2 ELECTRICAL-LIGHTING PLAN

Consultant:

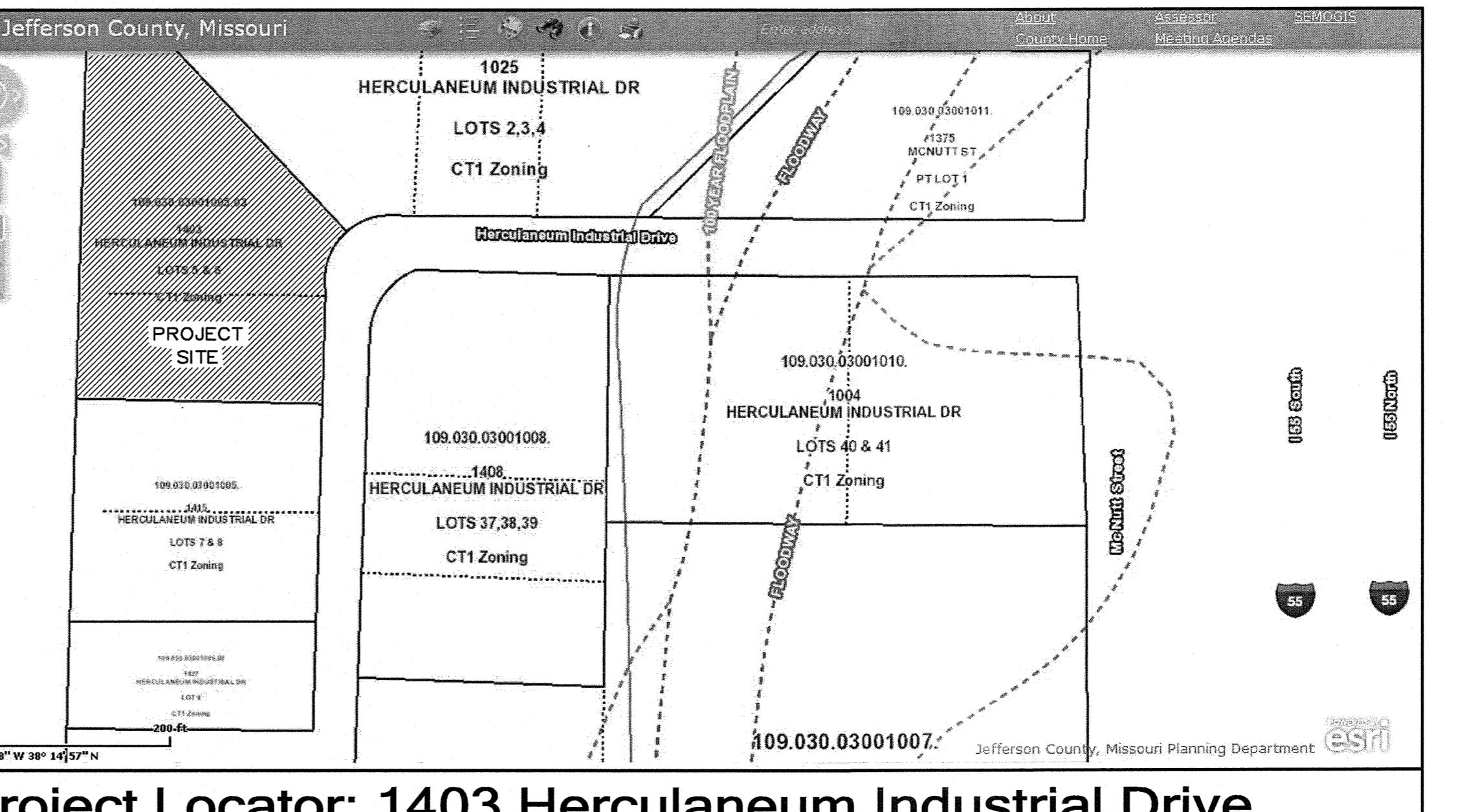
FF FREINER, P.E. (MECHANICAL & ELECTRICAL)
12138 LOWILL; ST. LOUIS, MO 63127
(314) 843-7157

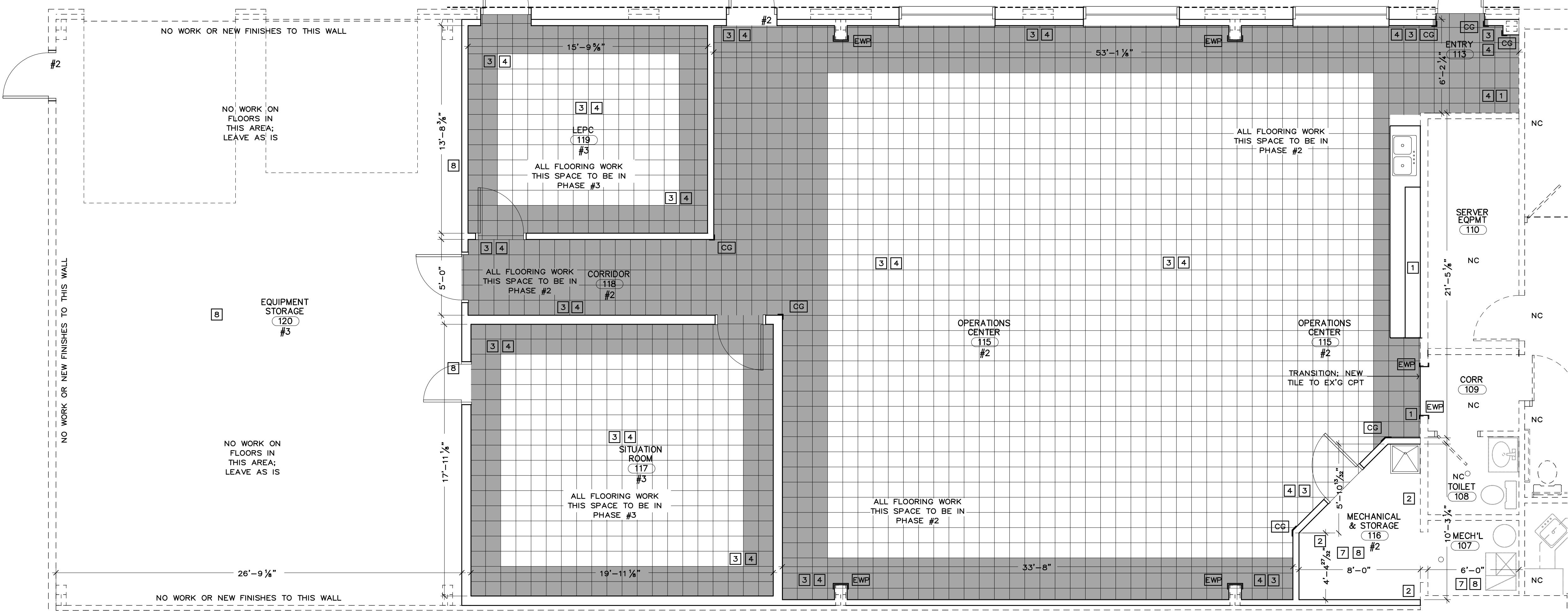


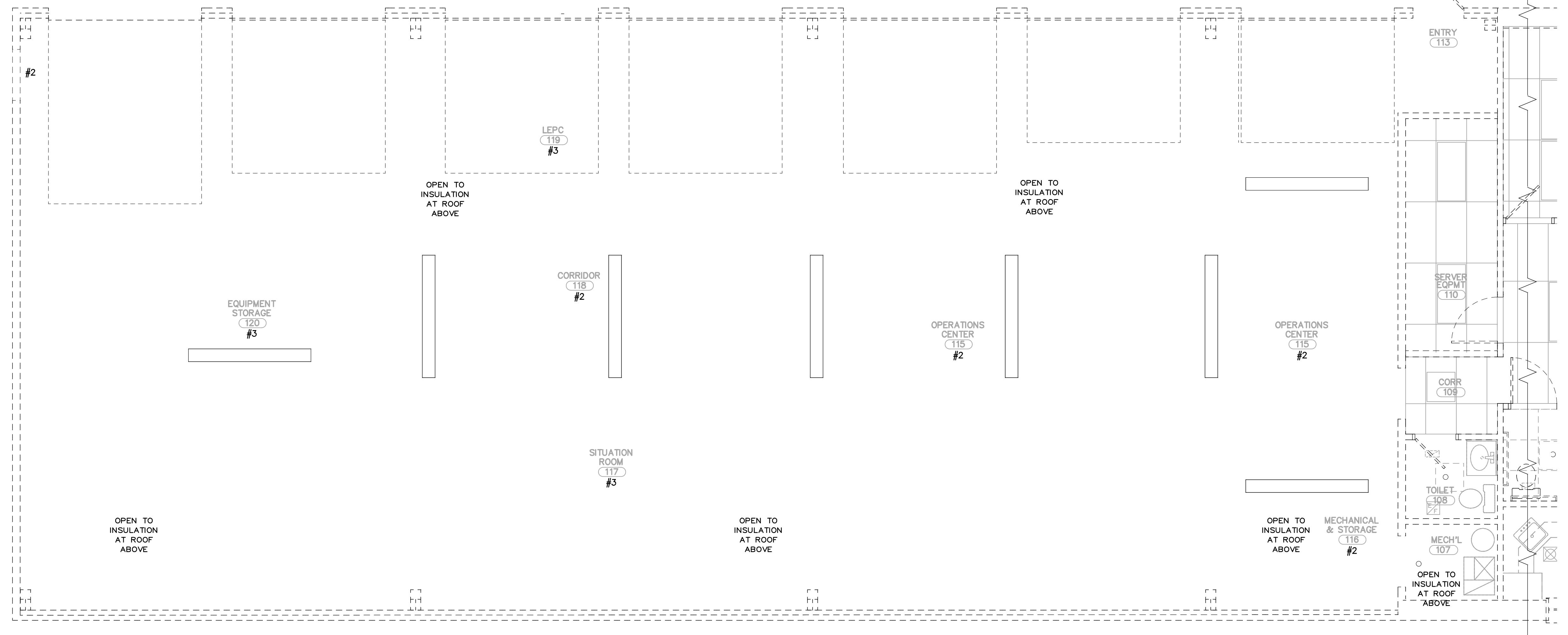
EMERGENCY EXITING/OCCUPANCY PLAN
SCALE: 1/8" = 1'-0"

GENERAL PROJECT NOTES:

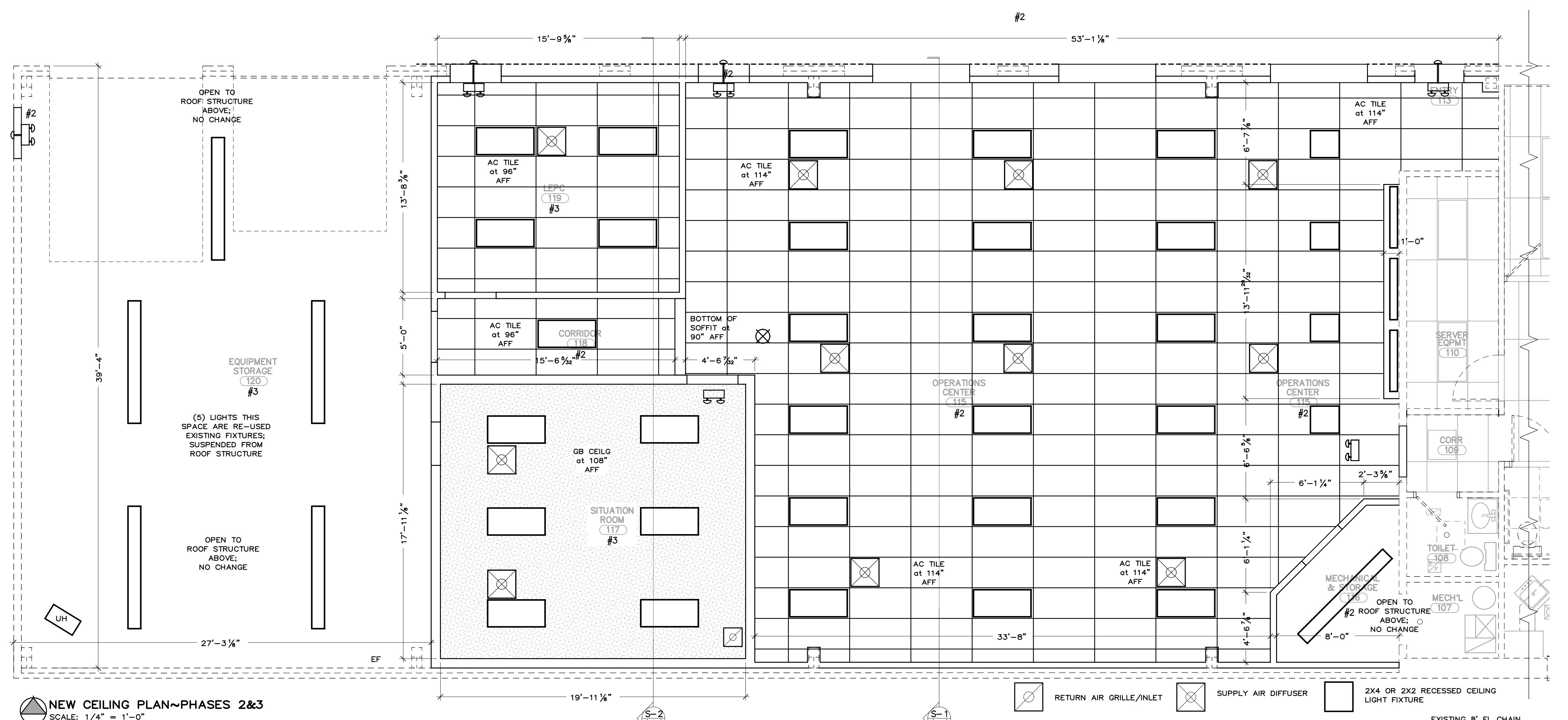
- 1) DO NOT SCALE DRAWINGS. FOLLOW WRITTEN DIMENSIONS ONLY. FOR CRITICAL DIMENSIONS NOT SHOWN IN THE DRAWINGS, CONTACT THE ARCHITECT.
- 2) THESE DRAWINGS ARE ACCOMPANIED BY A PROJECT MANUAL, INCLUDING THE SPECIFICATIONS. DO NOT RELY SOLELY ON ONE OR THE OTHER. ADVISE THE ARCHITECT OR ENGINEER IMMEDIATELY OF ANY CONFLICTS BETWEEN THE TWO. IF NO TIMELY RESPONSE IS RECEIVED FROM THE ARCHITECT OR ENGINEER, ASSUME THE MORE EXPENSIVE OR MORE RESTRICTIVE CONDITION WILL PREVAIL.
- 3) SITE AND/OR EXISTING CONDITIONS DRAWINGS ARE BASED ON CASUAL OBSERVATIONS, NOT EXHAUSTIVE EXAMINATIONS. CONTRACTOR SHALL ADVISE ARCHITECT IMMEDIATELY OF ANY CONDITIONS ON THE SITE WHICH ARE AT VARIANCE WITH THE DRAWINGS OR SPECIFICATIONS.
- 4) DO NOT CUT OR MODIFY ANY STRUCTURAL ITEM WITHOUT FIRST REVIEWING THE PROPOSED MODIFICATION WITH THE ARCHITECT AND SUBMITTING A PLAN FOR ANY TEMPORARY SHORING NECESSARY.
- 5) ALL MATERIALS SHALL BE NEW AND INSTALLED TO MANUFACTURER'S WRITTEN SPECIFICATIONS.
- 6) PROVIDE ALL NECESSARY BARRIERS AND SAFETY SIGNAGE NECESSARY FOR A SAFE WORK ENVIRONMENT. CONFORM TO ALL LOCAL, COUNTY, STATE AND FEDERAL REQUIREMENTS WHICH APPLY.
- 7) WHERE AN ITEM OR SYSTEM IS SHOWN TO BE INCLUDED IN THE WORK, IT SHALL BE PROVIDED AS A COMPLETE, OPERABLE, CODE-COMPLIANT ITEM OR SYSTEM. THE CONTRACTOR SHALL INCLUDE ALL CONNECTIONS, SWITCHING, POWER, VENTILATION AND ANY OTHER ACCESSORIES NECESSARY TO PROVIDE A COMPLETE, OPERABLE ITEM OR SYSTEM.
- 8) ROUTING OF ELECTRICAL WIRING, PLUMBING LINES (WATER SUPPLY, WASTE, DRAIN, VENTS), AND DUCTWORK WHERE SHOWN ON PLANS IS SCHEMATIC. IT IS THE RESPONSIBILITY OF EACH CONTRACTOR/SUBCONTRACTOR TO COORDINATE INSTALLATION OF THESE ITEMS WITH ONE ANOTHER.
- 9) LOCATION OF HVAC EQUIPMENT - RTU'S, AIR HANDLERS, CONDENSERS, EXHAUST FANS, ETC - IS SCHEMATIC. COORDINATE THE FINAL LOCATIONS WITH OTHER CONSIDERATIONS AND CONFIRM WITH ARCHITECT.
- 10) RENDER ALL PENETRATIONS THROUGH BUILDING'S EXTERIOR ENCLOSURE WEATHER TIGHT.
- 11) PAINT ALL ROOF AND/OR WALL PENETRATIONS TO MATCH (AS CLOSELY AS IS PRACTICAL) THE ADJACENT ROOF OR WALL MATERIAL.
- 12) COMMENCING INSTALLATION OF ANY ITEM, EQUIPMENT OR SYSTEM INDICATES ACCEPTANCE OF ANY PRE-EXISTING CONDITION UPON WHICH THE SUBSEQUENT CONSTRUCTION IS DEPENDENT OR ATTACHED TO OR SUPPORTED ON. FOR EXAMPLE, BEGINNING FLOORING INSTALLATION REPRESENTS ACCEPTANCE OF THE SUB FLOOR CONSTRUCTION AND/OR PREPARATION.
- 13) IN ALL MATTERS RELATING TO INTERPRETATION AND/OR ENFORCEMENT OF THE APPLICABLE CODES, DESIGNATED HERCULANEUM CITY OFFICER SHALL BE CONSIDERED THE AUTHORITY HAVING JURISDICTION.







EXISTING CEILING PLAN
SCALE: 1/4" = 1'-0"



NEW CEILING PLAN~PHASES 2&3
SCALE: 1/4" = 1'-0"

GENERAL NOTES:

1) DO NOT SCALE DRAWINGS. FOLLOW WRITTEN DIMENSIONS ONLY. FOR CRITICAL DIMENSIONS NOT SHOWN IN THE DRAWINGS, CONTACT THE ARCHITECT.

2) THESE DRAWINGS ARE ACCOMPANIED BY A PROJECT MANUAL, INCLUDING THE SPECIFICATIONS. DO NOT RELY SOLELY ON ONE OR THE OTHER. ADVISE THE ARCHITECT OR ENGINEER IMMEDIATELY OF ANY CONFLICTS BETWEEN THE TWO. IF NO TIMELY RESPONSE IS RECEIVED FROM THE ARCHITECT OR ENGINEER, ASSUME THE MORE EXPENSIVE OR MORE RESTRICTIVE CONDITION WILL PREVAIL.

3) SITE AND/OR EXISTING CONDITIONS DRAWINGS ARE BASED ON CASUAL OBSERVATIONS, NOT EXHAUSTIVE EXAMINATIONS. CONTRACTOR SHALL ADVISE ARCHITECT IMMEDIATELY OF ANY CONDITIONS ON THE SITE WHICH ARE AT VARIANCE WITH THE DRAWINGS OR SPECIFICATIONS.

4) DO NOT CUT OR MODIFY ANY STRUCTURAL ITEM WITHOUT FIRST REVIEWING THE PROPOSED MODIFICATION WITH THE ARCHITECT AND SUBMITTING A PLAN FOR ANY TEMPORARY SHORING NECESSARY.

5) ALL MATERIALS SHALL BE NEW AND INSTALLED TO MANUFACTURER'S WRITTEN SPECIFICATIONS.

6) PROVIDE ALL NECESSARY BARRIERS AND SAFETY SIGNAGE NECESSARY FOR A SAFE WORK ENVIRONMENT. CONFORM TO ALL LOCAL, COUNTY, STATE AND FEDERAL REQUIREMENTS WHICH APPLY.

7) WHERE AN ITEM OR SYSTEM IS SHOWN TO BE INCLUDED IN THE WORK, IT SHALL BE PROVIDED AS A COMPLETE, OPERABLE, CODE-COMPLIANT ITEM OR SYSTEM. THE CONTRACTOR SHALL INCLUDE ALL CONNECTIONS, SWITCHING, POWER, VENTILATION AND ANY OTHER ACCESSORIES NECESSARY TO PROVIDE A COMPLETE, OPERABLE ITEM OR SYSTEM.

8) ROUTING OF ELECTRICAL WIRING, PLUMBING LINES (WATER SUPPLY, WASTE, DRAIN, VENTS), AND DUCTWORK WHERE SHOWN ON PLANS IS SCHEMATIC. IT IS THE RESPONSIBILITY OF EACH CONTRACTOR/ SUBCONTRACTOR TO COORDINATE INSTALLATION OF THESE ITEMS WITH ONE ANOTHER.

9) LOCATION OF HVAC EQUIPMENT - RTU'S, AIR HANDLERS, CONDENSERS, EXHAUST FANS, ETC - IS SCHEMATIC. COORDINATE THE FINAL LOCATIONS WITH OTHER CONSIDERATIONS AND CONFIRM WITH ARCHITECT.

10) RENDER ALL PENETRATIONS THROUGH BUILDING'S EXTERIOR ENCLOSURE WEATHER TIGHT.

11) PAINT ALL ROOF AND/OR WALL PENETRATIONS TO MATCH (AS CLOSELY AS PRACTICAL) THE ADJACENT ROOF OR WALL MATERIAL.

12) COMMENCING INSTALLATION OF ANY ITEM, EQUIPMENT OR SYSTEM INDICATES ACCEPTANCE OF ANY PRE-EXISTING CONDITION UPON WHICH THE SUBSEQUENT CONSTRUCTION IS DEPENDENT OR ATTACHED TO OR SUPPORTED ON. FOR EXAMPLE, BEGINNING FLOORING INSTALLATION REPRESENTS ACCEPTANCE OF THE SUB FLOOR CONSTRUCTION AND/OR PREPARATION.

13) IN ALL MATTERS RELATING TO INTERPRETATION AND/OR ENFORCEMENT OF THE APPLICABLE CODES, DESIGNATED HERCULANEUM CITY OFFICER SHALL BE CONSIDERED THE AUTHORITY HAVING JURISDICTION.

CEILING NOTES:

1) ALL NEW CEILINGS TO BE SEISMICALLY BRACED PER DETAIL DRAWING SHEET A-4.

2) ALL NEW AND EXISTING LIGHT FIXTURES TO BE LEFT IN PLACE SHALL BE SECURED TO ROOF STRUCTURE BY HANGER WIRE CAPABLE OF INDEPENDENTLY SUPPORTING SAID FIXTURE IN CASE OF CEILING FAILURE; ATTACH AT TWO DIAGONALLY OPPOSED CORNERS.

COMMISSION NUMBER
15-055-B
DRAWN BY mjb
CHECKED BY SJB
DATE 3/1/2016

Final Documents;
Issued for Bidding & Construction with AHJ Issued Permits

PLAN STATUS

REVISIONS



Steven J. Bacon
Architect
MO Lic: #007402



BACON COMMERCIAL DESIGN LLC

ARCHITECTURAL DESIGN AND CONSULTING

po box 605
crystal city
mo 63019
(636) 933-0007

corporate authority certificate # 200607290

JEFFERSON CO.
(MISSOURI)
PUBLIC WORKS
DEPARTMENT

Jason Jonas, P.E.
Director

Remodel Existing Building at
1403 Herculaneum Industrial Drive;
Herculaneum, MO

Emergency Management & Operations Center
Phases 2 & 3

COMMISSION

EXISTING and NEW CEILING PLANS

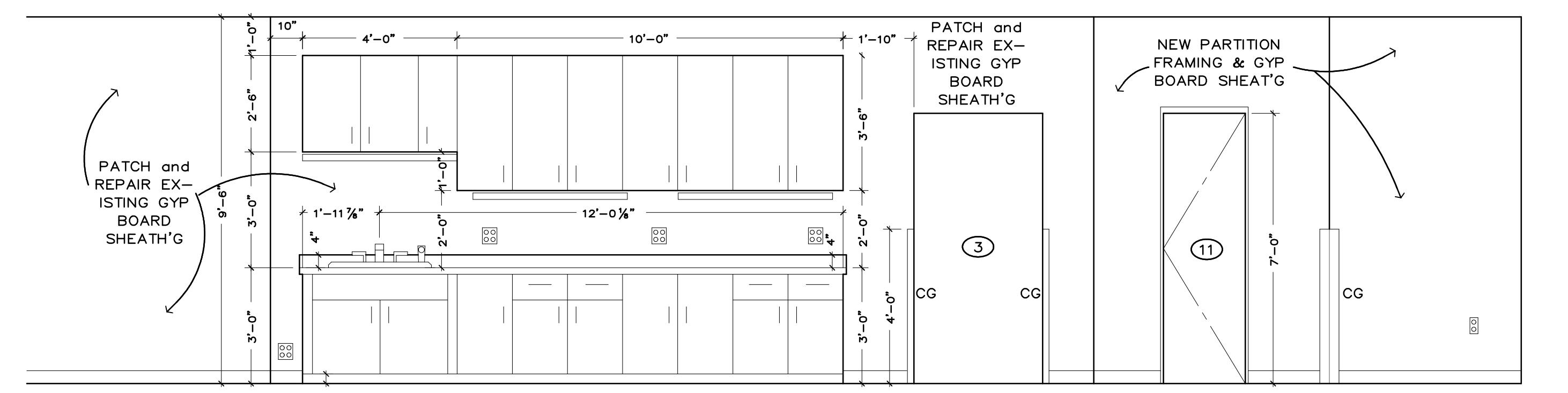
SHEET TITLE

SHEET NUMBER

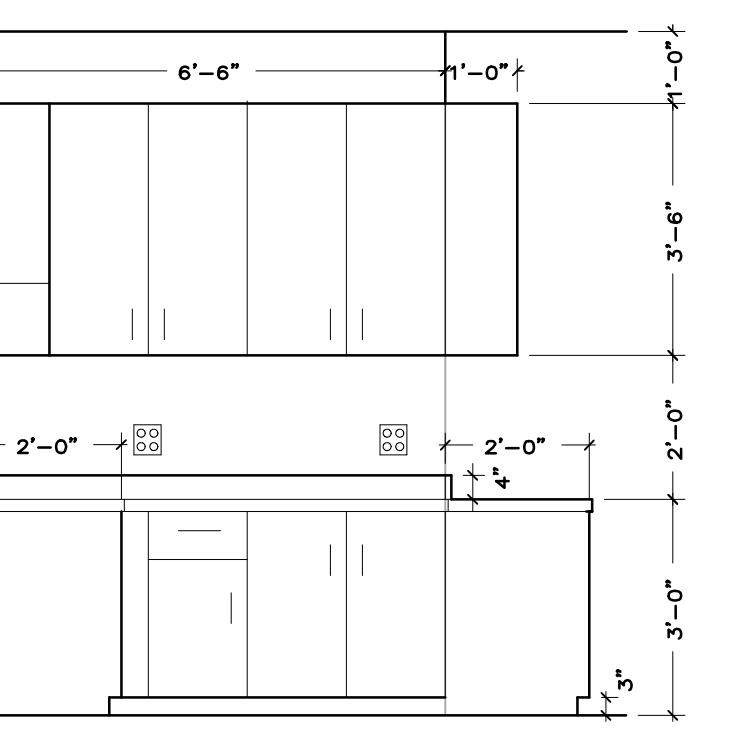
A-3
OF 5

APPLICABLE CODES:

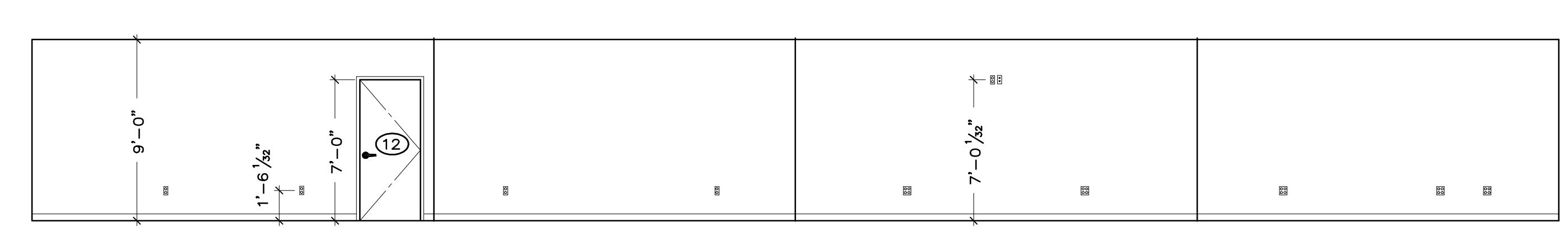
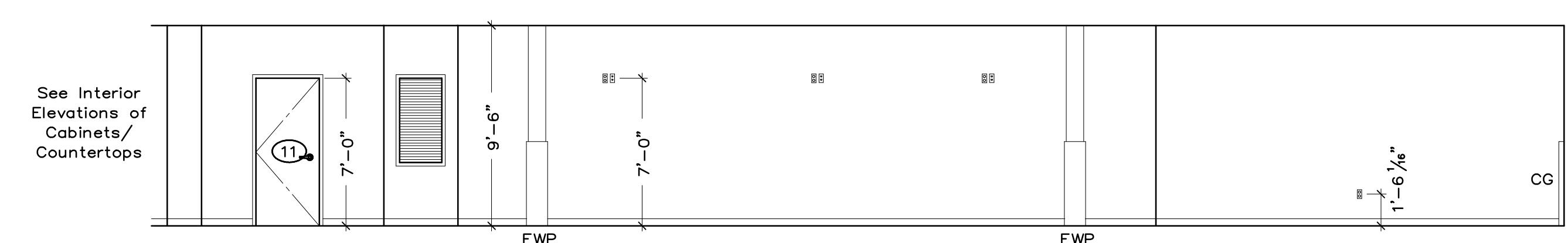
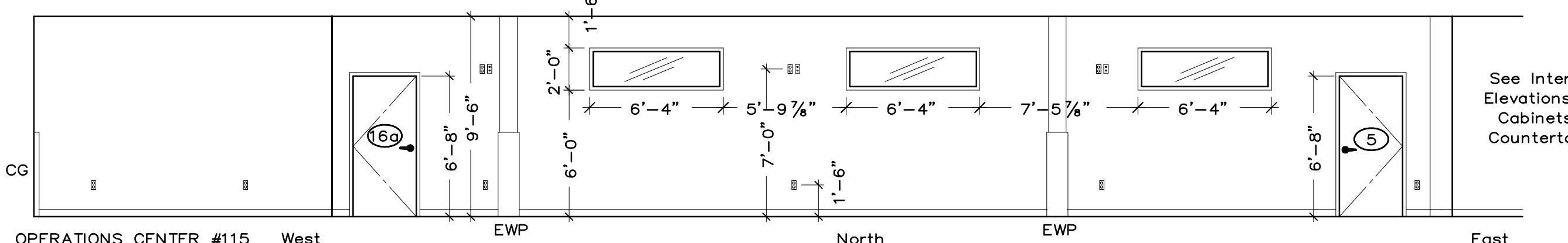
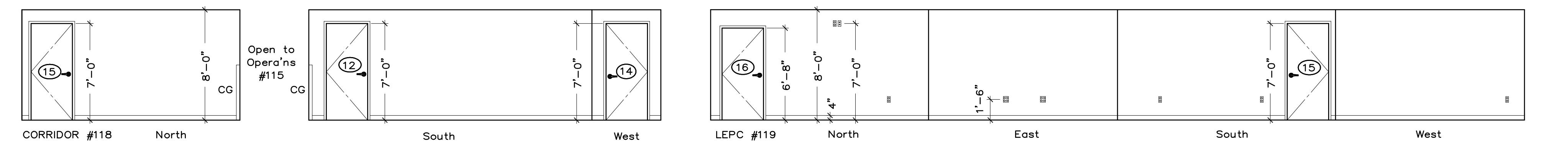
INT'L CODE COUNCIL, 2009 1ST EDITIONS;
INT'L BUILDING CODE; INT'L FIRE CODE;
INT'L FUEL GAS CODE; INT'L MECHANICAL CODE;
INT'L ENERGY CONSERVATION CODE;
INT'L PLUMBING CODE, AND
2008 NATIONAL ELECTRICAL CODE



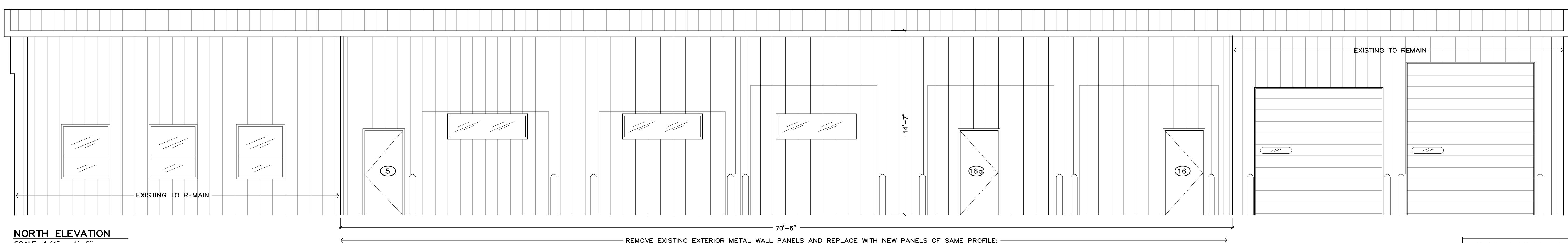
IE.1 INTERIOR ELEVATION
A-4 SCALE: 3/8" = 1'-0"



IE.2 INTERIOR ELEVATION
A-4 SCALE: 3/8" = 1'-0"



INTERIOR WALL ELEVATIONS
SCALE: 3/16" = 1'-0"



NORTH ELEVATION
SCALE: 1/4" = 1'-0"

GENERAL NOTES:

- DO NOT SCALE DRAWINGS. FOLLOW WRITTEN DIMENSIONS ONLY. FOR CRITICAL DIMENSIONS NOT SHOWN IN THE DRAWINGS, CONTACT THE ARCHITECT.
- THESE DRAWINGS ARE ACCOMPANIED BY A PROJECT MANUAL, INCLUDING THE SPECIFICATIONS. DO NOT RELY SOLELY ON ONE OR THE OTHER. ADVISE THE ARCHITECT OR ENGINEER IMMEDIATELY OF ANY CONFLICTS BETWEEN THE TWO. IF NO TIMELY RESPONSE IS RECEIVED FROM THE ARCHITECT OR ENGINEER, ASSUME THE MORE EXPENSIVE OR MORE RESTRICTIVE CONDITION WILL PREVAIL.
- SITE AND/OR EXISTING CONDITIONS DRAWINGS ARE BASED ON CASUAL OBSERVATIONS, NOT EXHAUSTIVE EXAMINATIONS. CONTRACTOR SHALL ADVISE ARCHITECT IMMEDIATELY OF ANY CONDITIONS ON THE SITE WHICH ARE AT VARIANCE WITH THE DRAWINGS OR SPECIFICATIONS.
- DO NOT CUT OR MODIFY ANY STRUCTURAL ITEM WITHOUT FIRST REVIEWING THE PROPOSED MODIFICATION WITH THE ARCHITECT AND SUBMITTING A PLAN FOR ANY TEMPORARY SHORING NECESSARY.

- ALL MATERIALS SHALL BE NEW AND INSTALLED TO MANUFACTURER'S WRITTEN SPECIFICATIONS.
- PROVIDE ALL NECESSARY BARRIERS AND SAFETY SIGNAGE NECESSARY FOR A SAFE WORK ENVIRONMENT. CONFORM TO ALL LOCAL, COUNTY, STATE AND FEDERAL REQUIREMENTS WHICH APPLY.

- WHERE AN ITEM OR SYSTEM IS SHOWN TO BE INCLUDED IN THE WORK, IT SHALL BE PROVIDED AS A COMPLETE, OPERABLE, CODE-COMPLIANT ITEM OR SYSTEM. THE CONTRACTOR SHALL INCLUDE ALL CONNECTIONS, SWITCHING, POWER, VENTILATION AND ANY OTHER ACCESSORIES NECESSARY TO PROVIDE A COMPLETE, OPERABLE ITEM OR SYSTEM.

- ROUTING OF ELECTRICAL WIRING, PLUMBING LINES (WATER SUPPLY, WASTE, DRAIN, VENTS), AND DUCTWORK WHERE SHOWN ON PLANS IS SCHEMATIC. IT IS THE RESPONSIBILITY OF EACH CONTRACTOR/ SUBCONTRACTOR TO COORDINATE INSTALLATION OF THESE ITEMS WITH ONE ANOTHER.

- LOCATION OF HVAC EQUIPMENT - RTU'S, AIR HANDLERS, CONDENSERS, EXHAUST FANS, ETC - IS SCHEMATIC. COORDINATE THE FINAL LOCATIONS WITH OTHER CONSIDERATIONS AND CONFIRM WITH ARCHITECT.

- RENDER ALL PENETRATIONS THROUGH BUILDING'S EXTERIOR ENCLOSURE WEATHER TIGHT.

- PAINT ALL ROOF AND/OR WALL PENETRATIONS TO MATCH (AS CLOSELY AS PRACTICAL) THE ADJACENT ROOF OR WALL MATERIAL.

- COMMENCING INSTALLATION OF ANY ITEM, EQUIPMENT OR SYSTEM INDICATES ACCEPTANCE OF ANY PRE-EXISTING CONDITION UPON WHICH THE SUBSEQUENT CONSTRUCTION IS DEPENDENT OR ATTACHED TO OR SUPPORTED ON. FOR EXAMPLE, BEGINNING FLOORING INSTALLATION REPRESENTS ACCEPTANCE OF THE SUB FLOOR CONSTRUCTION AND/OR PREPARATION.

- IN ALL MATTERS RELATING TO INTERPRETATION AND/OR ENFORCEMENT OF THE APPLICABLE CODES, DESIGNATED HERCULANEUM CITY OFFICER SHALL BE CONSIDERED THE AUTHORITY HAVING JURISDICTION.

ITEMS DEPICTED WITH DASHED LINES ARE EXISTING CONSTRUCTION OR FIXTURES. OFFICE AND OTHER FURNITURE DEPICTED IN THE PLAN WILL BE SUPPLIED BY OWNERS, AND IS INCLUDED FOR REFERENCE PURPOSES ONLY.

DOOR TYPES/NOTES

NO SCALE

DOOR & HARDWARE SCHEDULE

MK	SIZE	RM	TYPE	WALL	PANIC	CLOSER	STOP	FUNCTION	REMARKS
1.2	Phase I	---	EXISTG	---	---	---	---	---	NO CHANGE
3	3'-4" wide	115	CASED OPG	---	NO	NO	NO	NONE	2" PVC CORNER GUARDS
4	Phase I	---	EXISTG	---	---	---	---	---	NO CHANGE
5	3'-0"x6'-8"	113	1	Ex'g PEMB 8" Detail X, Sh A-4	YES	YES (TOP JAMB II MT)	NO	ENTRY	TO EXTERIOR, GALVD
6-10	Phase I	VAR	EXISTG	---	---	---	---	---	NO CHANGE
11	3'-0"x7'-0"	115	1	4.8" FRAME	NO	YES	NO	STORE RM	---
12	3'-0"x7'-0"	117	1	7.5" FRAME	NO	NO	WALL	OFFICE	---
13	2'-6"x2'-6"	120	2	7.5" FRAME	NO	NO	NO	STORE RM	ACCESS TO ABOVE #17
14	3'-0"x7'-0"	118	1	4.8" FRAME	NO	NO	WALL	ENTRY	FROM STORAGE, INCL W/STRP & THRESHOLD
15	3'-0"x7'-0"	119	1	4.8" FRAME	NO	NO	WALL	OFFICE	---
16	3'-0"x6'-8"	119	1	Ex'g PEMB 8" Detail X, Sh A-4	YES	YES (TOP JAMB II MT)	NO	ENTRY	TO EXTERIOR, GALVD
16a	3'-0"x6'-8"	115	1	Ex'g PEMB 8" Detail X, Sh A-4	YES	YES (TOP JAMB II MT)	NO	ENTRY	TO EXTERIOR, GALVD
17	8'x10'	120	EXISTG	---	---	---	---	---	NO CHANGE
18	8'x12'	120	EXISTG	---	---	---	---	---	NO CHANGE
19	3'-0"x8'-8"	120	1	Ex'g PEMB 8" Exterior End Wall	YES	YES (TOP JAMB II MT)	NO	ENTRY	TO EXTERIOR; GALVD; IN NEW WALL OPG

SEE SPEC'S SECTION 8-7100 FOR ADDITIONAL DOOR HARDWARE INFO, INCLUDING CLOSERS, STOPS, GASKETING/THRESHOLDS, AND PROTECTION PLATES.

COMMISSION NUMBER
15-055-B
DRAWN BY mjb
CHECKED BY SJB
DATE 3/1/2016

Final Documents;
Issued for Bidding & Construction
with AHJ Issued Permits

PLAN STATUS

REVISIONS

Steven J. Bacon
Architect
MO Lic: #007402

B
BACON COMMERCIAL DESIGN LLC

ARCHITECTURAL DESIGN and CONSULTING

po box 605
crystal city
mo 63019
(636) 933-0007
corporate authority certificate # 20060729

JEFFERSON CO.
(MISSOURI)
PUBLIC WORKS
DEPARTMENT
Jason Jonas, P.E.
Director

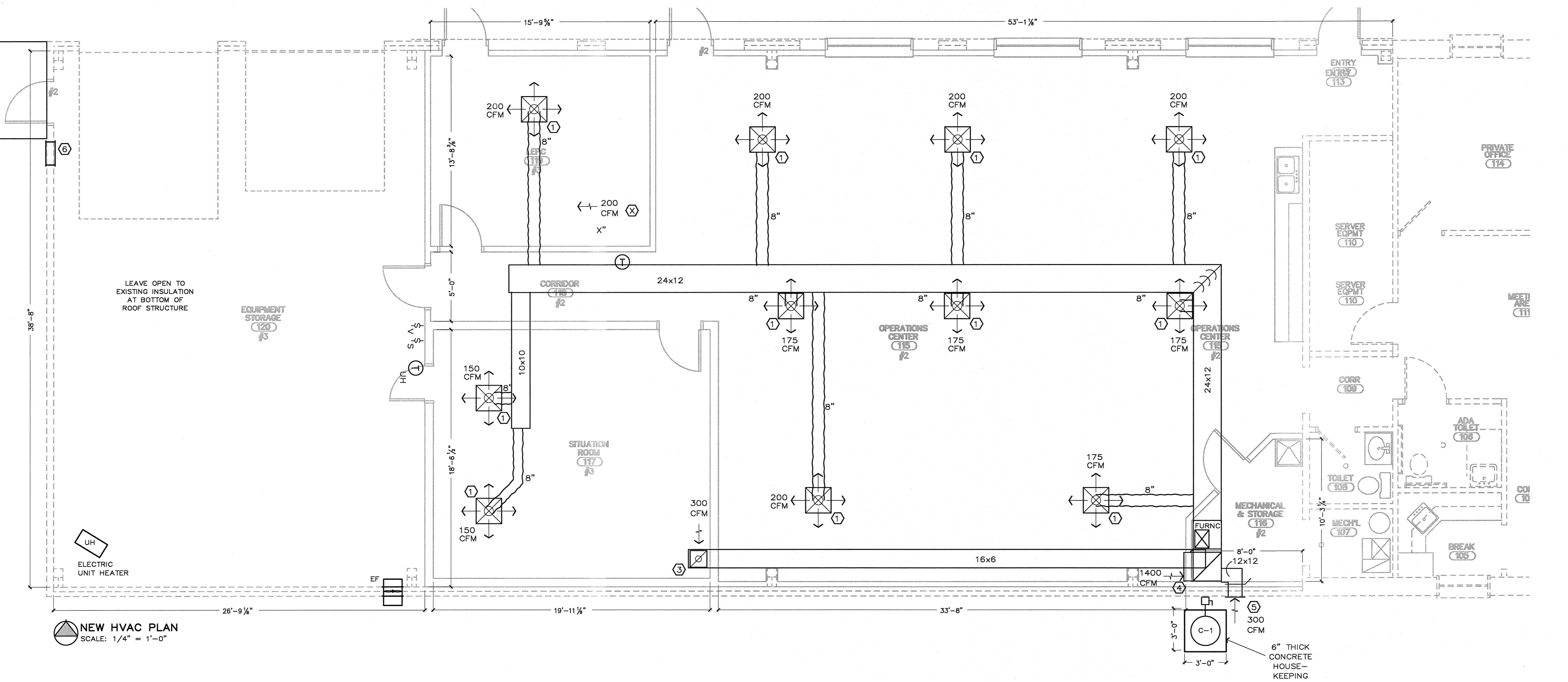
Remodel Existing Building at
1403 Herculaneum Industrial Drive;
Herculaneum, MO

Emergency Management & Operations Center
Phases 2 & 3

COMMISSION
EXTERIOR ELEVATION SCHEDULES DETAILS SHEET TITLE

SHEET NUMBER
A-5
OF 5

APPLICABLE CODES:
INT'L CODE COUNCIL, 2009 1ST EDITION;
INT'L BUILDING CODE; INT'L FIRE CODE;
INT'L FUEL & GAS CODE; INT'L MECHANICAL CODE; INT'L ENERGY CONSERVATION CODE;
INT'L PLUMBING CODE, AND
2008 NATIONAL ELECTRICAL CODE



MECHANICAL EQUIPMENT SCHEDULE

C-1
CONDENSING UNIT, 2 STAGE, NOMINAL 5 TONS. LENNOX MODEL NO. XC21-060-230-5. 230 VOLTS, SINGLE PHASE, 60 HZ. 38.0 MCA, 50 MOPC.

EF
EXHAUST FAN, AXIAL, DIRECT DRIVE, 30 X 30. HP MOTOR WITH VARIABLE SPEED CONTROLLER, 1800 CFM AT 0.25S.P., ON LOW SPEED, 5550 CFM ON HIGH SPEED, 120 VOLTS. COOK MODEL NO. 24510D. ACCESSORIES TO INCLUDE: BACKDRAFT DAMPER, FILTER SCREEN & VARIABLE SPEED MOTOR CONTROL. EXHAUST FAN TO BE OPERATED BY MANUAL SWITCH AND CO SENSOR.

UH
UNIT HEATER, ELECTRIC, HORIZONTAL, SUSPENDED, 10KW, 240 VOLTS, SINGLE PHASE, MARKEL MODEL NO. HF2B5110CA1L. OPTIONS TO INCLUDE: WALL MOUNTED THERMOSTAT, POWER DISCONNECT AND SUMMER FAN SWITCH.

LEGEND:
 RETURN AIR GRILLE/INLET
 SUPPLY AIR DIFFUSER
 THERMOSTAT
 ELECTRICAL DISCONNECT
 FIXTURE MARK; REFER TO SCHEDULE
 MANUAL VOLUME DAMPER

F
AIR HANDLER, WITH ELECTRIC HEAT. LENNOX MODEL NO. CBX32MV-060-230-6. 2000 CFM INDOOR AIR FLOW AT 0.8" S.P., 15 KW ADD ON 2 STAGE ELECTRIC HEAT ECB40-15CB (34W95). 240 VOLTS, SINGLE PHASE, 2 CIRCUITS. CKT NO. 1 IS 45 MOPC, 32 MCA. CKT 2 IS 50 MOPC 35 MCA. NOMINAL 5 TON EVAPORATOR COIL OPTIONS AND ACCESSORIES TO INCLUDE: CX34-60D-6F COOLING COIL, SIDE RETURN UNIT STAND (45K32), AND 2 STAGE HEATING/COOLING PROGRAMMABLE THERMOSTAT. SET OUTSIDE AIR AT 300 CFM.

HVAC GENERAL NOTES
 1) RENDER ANY PASSAGE OF DUCTWORK THRU OUTSIDE WALLS AND ROOF PERMANENTLY WATERPROOF.
 2) LOCATE EQUIPMENT SO AS TO PROVIDE ADEQUATE FILTER REMOVAL AND MAINTENANCE ACCESS SPACE.

3) OUTSIDE AIR INTAKE AND EXHAUST OPENINGS SHALL BE PROTECTED AGAINST WEATHER AND ENTRY OF SNOW AND WATER.
 4) PROVIDE CONDENSATE PUMP AND DISCHARGE LINE FROM AIR HANDLER TO SANITARY LINE.

5) SIZE REFRIGERANT PIPING FROM CONDENSER TO AIR HANDLER PER MANUFACTURERS RECOMMENDATION.

6) DUCT LININGS SHALL HAVE A FLAME SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE-DEVELOPED INDEX OF NOT MORE THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84.

7) ALL DUCTWORK PER SMACNA STANDARDS.

8) PROVIDE 4" THICK CONCRETE PAD FOR CONDENSING UNITS.

9) PROVIDE FRESH OUTSIDE AIR TO THE RETURN SIDE OF AIR HANDLER AS SHOWN ON THE PLANS. PROVIDE AND INSTALL A VOLUME DAMPER IN THE OUTSIDE AIR DUCT. SET OUTSIDE AIR AT 300 CFM.

INT'L CODE COUNCIL, 2009 1ST EDITIONS:
 INT'L BUILDING CODE; INT'L FIRE CODE;
 INT'L FUEL GAS CODE; INT'L MECHANICAL CODE; INT'L ENERGY CONSERVATION CODE;
 INT'L PLUMBING CODE, AND
 2008 NATIONAL ELECTRICAL CODE.

AIR DEVICE SCHEDULE						
TITUS						
Mk	MODEL	MODULE SIZE	NECK SIZE	DAMPER	TYPE	CFM
1	TMSA 8	24 X 24	8" Ø	D-100	SUPPLY	200
2	TMSA 8	24 X 24	8" Ø	D-100	SUPPLY	200
3	355RS	14X14	14" X 14"	NONE	RETURN	300
4	355RS	48X24	48" X 24"	NONE	RETURN	1400
RUSKIN						
5	EME 520 DD	12 X 12	12" X 12"	NONE	INTAKE LOUVER	300
6	IL-23	--	36" X 36"	BACKDRAFT LOUVER		5000

APPLICABLE CODES:

INT'L CODE COUNCIL, 2009 1ST EDITIONS:
 INT'L BUILDING CODE; INT'L FIRE CODE;
 INT'L FUEL GAS CODE; INT'L MECHANICAL CODE; INT'L ENERGY CONSERVATION CODE;
 INT'L PLUMBING CODE, AND
 2008 NATIONAL ELECTRICAL CODE.

COMMISSION NUMBER
15-055-B
DRAWN BY mjb
CHECKED BY FFF
DATE 3/1/2016

Final Documents;
Issued for Bidding
& Construction
with AHJ Issued
Permits

PLAN STATUS

Frank F. Freiner
Prof'l Engineer
MO Lic: #018743

B
BACON
COMMERCIAL
DESIGN LLC

ARCHITECTURAL
DESIGN and
CONSULTING

po box 605
crystal city
mo 63019
(636) 933-0007
corporate authority
certificate #: 2006007290

JEFFERSON CO.
(MISSOURI)
PUBLIC WORKS
DEPARTMENT
Jason Jonas, P.E.
Director

Remodel Existing
Building at
1403 Herculaneum
Industrial Drive;
Herculaneum, MO

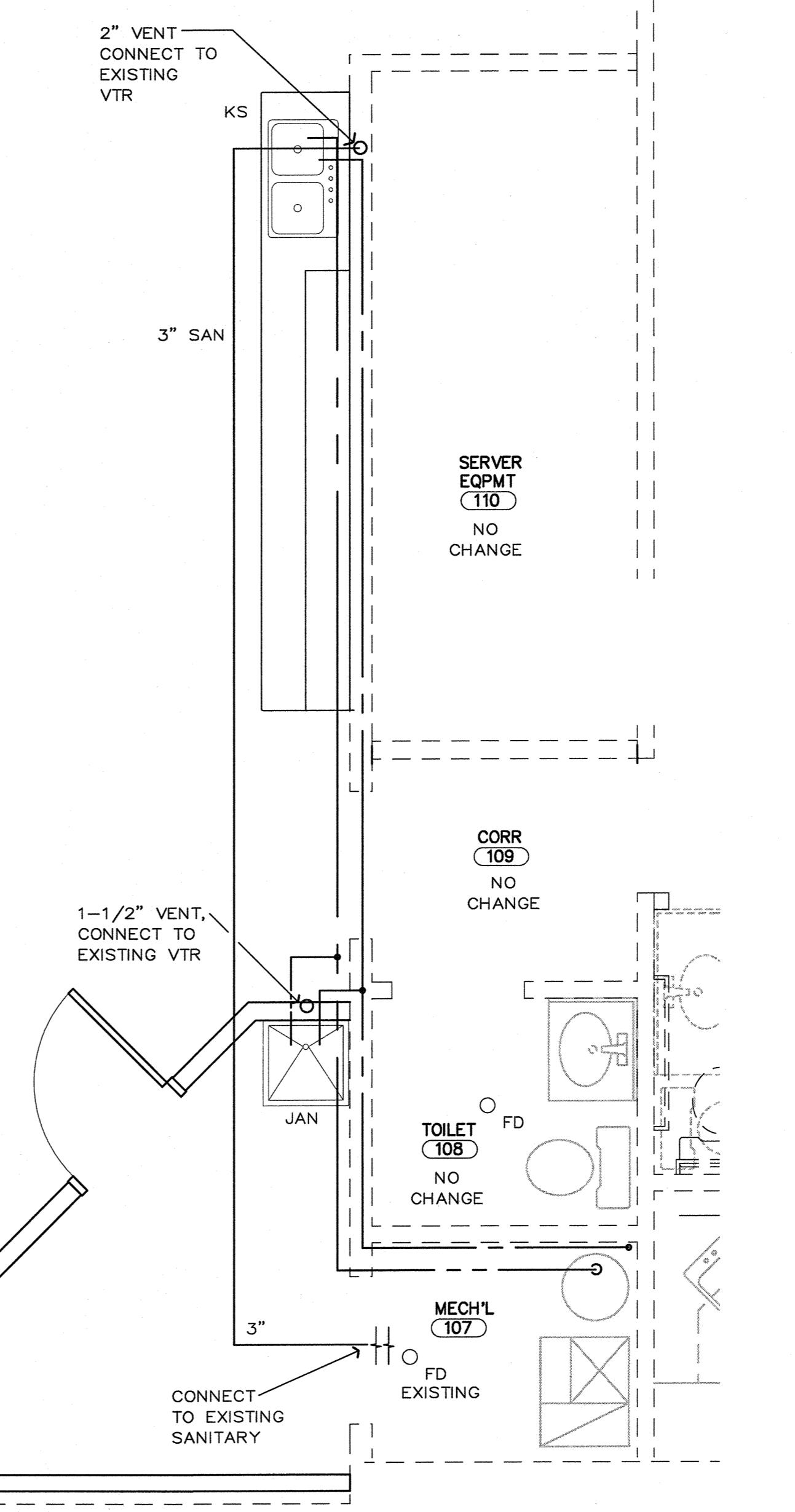
Emergency Management
Operations Center
Phases 2 & 3
COMMISSION

MECHANICAL-
HVAC PLAN

SHEET TITLE
SHEET NUMBER

M-1
OF 1

GENERAL NOTES:
 1) DO NOT SCALE DRAWINGS. FOLLOW WRITTEN DIMENSIONS ONLY. FOR CRITICAL DIMENSIONS NOT SHOWN IN THE DRAWINGS, CONTACT THE ARCHITECT.
 2) THESE DRAWINGS ARE ACCOMPANIED BY A PROJECT MANUAL, INCLUDING THE SPECIFICATIONS. DO NOT RELY SOLELY ON ONE OR THE OTHER. ADVISE THE ARCHITECT OR ENGINEER IMMEDIATELY OF ANY CONFLICTS BETWEEN THE TWO. IF NO TIMELY RESPONSE IS RECEIVED FROM THE ARCHITECT OR ENGINEER, ASSUME THE MORE EXPENSIVE OR MORE RESTRICTIVE CONDITION WILL PREVAIL.
 3) SITE AND/OR EXISTING CONDITIONS DRAWINGS ARE BASED ON CASUAL OBSERVATIONS, NOT EXHAUSTIVE EXAMINATIONS. CONTRACTOR SHALL ADVISE ARCHITECT IMMEDIATELY OF ANY CONDITIONS ON THE SITE WHICH ARE AT VARIANCE WITH THE DRAWINGS OR SPECIFICATIONS.
 4) ITEM WITHOUT FIRST REVIEWING THE PROPOSED MODIFICATION WITH THE ARCHITECT AND SUBMITTING A PLAN FOR ANY TEMPORARY SHORING NECESSARY.
 5) ALL MATERIALS SHALL BE NEW AND INSTALLED TO MANUFACTURER'S WRITTEN SPECIFICATIONS.
 6) PROVIDE ALL NECESSARY BARRIERS AND SAFETY SIGNAGE NECESSARY FOR A SAFE WORK ENVIRONMENT, CONFORM TO ALL LOCAL, COUNTY, STATE AND FEDERAL REQUIREMENTS WHICH APPLY.
 7) WHERE AN ITEM OR SYSTEM IS SHOWN TO BE INCLUDED IN THE WORK, IT SHALL BE PROVIDED AS A COMPLETE, OPERABLE, CODE-COMPATIBLE ITEM OR SYSTEM. THE CONTRACTOR SHALL INCLUDE ALL CONNECTIONS, SWITCHING, POWER, VENTILATION AND ANY OTHER ACCESSORIES NECESSARY TO PROVIDE A COMPLETE, OPERABLE ITEM OR SYSTEM.
 8) ROUTING OF ELECTRICAL WIRING, PLUMBING LINES (WATER SUPPLY, WASTE, DRAIN, VENTS), AND DUCTWORK WHERE SHOWN ON PLANS IS SCHEMATIC. IT IS THE RESPONSIBILITY OF EACH CONTRACTOR/ SUBCONTRACTOR TO COORDINATE INSTALLATION OF THESE ITEMS WITH ONE ANOTHER.
 9) LOCATION OF HVAC EQUIPMENT - RTU'S, AIR HANDLERS, CONDENSERS, EXHAUST FANS, ETC - IS SCHEMATIC. COORDINATE THE FINAL LOCATIONS WITH OTHER CONSIDERATIONS AND CONFIRM WITH ARCHITECT.
 10) RENDER ALL PENETRATIONS THROUGH BUILDING'S EXTERIOR ENCLOSURE WEATHER TIGHT.
 11) PAINT ALL ROOF AND/OR WALL PENETRATIONS TO MATCH (AS CLOSELY AS IS PRACTICAL) THE ADJACENT ROOF OR WALL MATERIAL.
 12) COMMENCING INSTALLATION OF ANY ITEM, EQUIPMENT OR SYSTEM INDICATES ACCEPTANCE OF ANY PRE-EXISTING CONDITION UPON WHICH THE SUBSEQUENT CONSTRUCTION IS DEPENDENT OR ATTACHED TO OR SUPPORTED ON. FOR EXAMPLE, BEGINNING FLOORING INSTALLATION REPRESENTS ACCEPTANCE OF THE SUB FLOOR CONSTRUCTION AND/OR PREPARATION.
 13) IN ALL MATTERS RELATING TO INTERPRETATION AND/OR ENFORCEMENT OF THE APPLICABLE CODES, DESIGNATED HERCULANEUM CITY OFFICER SHALL BE CONSIDERED THE AUTHORITY HAVING JURISDICTION.

COMMISSION NUMBER
15-055-BDRAWN BY **mjb**
CHECKED BY **FFF**
DATE **3/1/2016**Final Documents;
Issued for Bidding
& Construction
with AHJ Issued
Permits**PLAN STATUS****REVISIONS**Frank F. Freiner
Prof'l Engineer
MO Lic: #018743**B****BACON COMMERCIAL DESIGN LLC**ARCHITECTURAL
DESIGN and
CONSULTINGpo box 605
crystal city
mo 63019
(636) 933-0007corporate authority
certificate #: 200607290JEFFERSON CO.
(MISSOURI)
PUBLIC WORKS
DEPARTMENTJason Jonas, P.E.
DirectorRemodel Existing
Building at
1403 Herculaneum
Industrial Drive;
Herculaneum, MOEmergency Manage-
ment & Operations
Center
Phases 2 & 3**COMMISSION****MECHANICAL-
PLUMBING PLAN****SHEET TITLE****SHEET
NUMBER****P-1
OF 1**

 **NEW PLUMBING PLAN**
SCALE: 3/8" = 1'-0"

PLUMBING GENERAL NOTES

- 1) THIS BUILDING IS EXISTING.
- 2) THE WATER SERVICE IS EXISTING.
- 3) THE WATER HEATER IS EXISTING.
- 4) THE SANITARY SYSTEM IS EXISTING.
- 5) ALL NEW WATER LINES TO BE 1/2" PEX PIPE AS APPROVED BY APPLICABLE CODES (IBC, IPC; 2009).
- 6) CONTRACTOR IS RESPONSIBLE FOR ROUTING OF NEW SANITARY, WATER AND VENT PIPING. SUBMIT PLANNED ROUTING TO OWNER/ARCHITECT FOR REVIEW PRIOR TO BEGINNING THIS WORK.
- 7) ALL PLUMBING WORK INCLUDED IN PHASE 2.

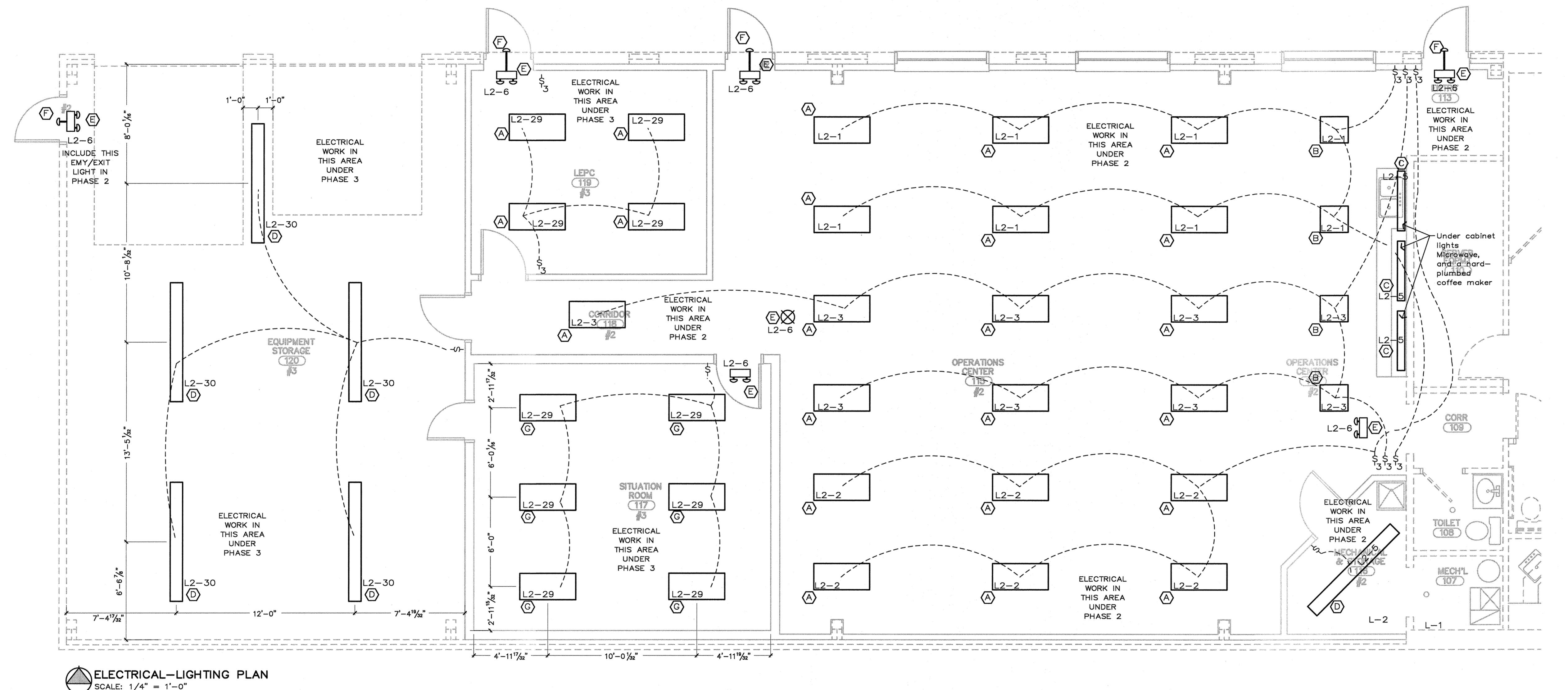
PLUMBING EQUIPMENT

KS
KITCHEN SINK, DOUBLE COMPARTMENT, STAINLESS STEEL, 18 GAUGE TYPE 302, SELF - RIMMING, 33L X 22W X 8"D, 3 FAUCET HOLES ON 4" CENTERS, ELKAY MODEL NO. LR 3322. FAUCET- ELKAY LKA - 2443 HI-ARC, TWO HANDLE, DECK MOUNT, WITH SPRAY.

JAN
JANITORS SINK, FLOOR, 28 X 28, AMERICAN - STANDARD FLORWELL NO. 7745.811 WITH WALL MOUNTED UTILITY FAUCET AMERICAN - STANDARD NO. 8344.111

APPLICABLE CODES:

INT'L CODE COUNCIL, 2009 1ST EDITIONS:
 INT'L BUILDING CODE; INT'L FIRE CODE;
 INT'L FUEL GAS CODE; INT'L MECHANICAL CODE; INT'L ENERGY CONSERVATION CODE;
 INT'L PLUMBING CODE, AND
 2008 NATIONAL ELECTRICAL CODE



LIGHT FIXTURE SCHEDULE					
NO.	MFR-CATALOG NO.	LAMPS	MOUNTING	FINISH	REMARKS
A	LITHONIA 2SP8G432A12MVOLT GEB10 IS	4F32 T8	LAY-IN	WHITE	4 LAMP T-8 FLUORESCENT; 2.4 LAY-IN FIXTURE
B	LITHONIA 2SP8G2U31A12MVOLT GEB10 IS	2F32 T-8	LAY-IN	WHITE	2 LAMP T-8 FLUORESCENT 2X2 LAY-IN FIXTURE
C	LITHONIA HUC448-120-S1 GEB10 IS-GW	1F32 T-8	SURFACE - UNDER CABINET	WHITE	1 LAMP 4 FT UNDERCABINET FIXTURE; T-8 FLUORESCENT
D	EXISTING LIGHT - RELOCATED		CHAIN HUNG	WHITE	
E	LITHONIA QUANTUM LHQM-LED-R-HO	LED	UNIVERSAL	WHITE	COMBINATION EXIT/EMERGENCY LIGHT WITH 90 MIN BATTERY BACKUP
F	LITHONIA ELAB-QWP-L0309	LED	SURFACE WALL	BLACK	WET LOCATION EGRESS EMERGENCY LIGHT

APPLICABLE CODES:

INT'L CODE COUNCIL, 2009 1ST EDITIONS:
INT'L BUILDING CODE; INT'L FIRE CODE;
INT'L FUEL GAS CODE; INT'L MECHANICAL CODE; INT'L ENERGY CONSERVATION CODE;
INT'L PLUMBING CODE, AND
2008 NATIONAL ELECTRICAL CODE

GENERAL NOTES:

- DO NOT SCALE DRAWINGS. FOLLOW WRITTEN DIMENSIONS ONLY. FOR CRITICAL DIMENSIONS NOT SHOWN IN THE DRAWINGS, CONTACT THE ARCHITECT.
- THESE DRAWINGS ARE ACCOMPANIED BY A PROJECT MANUAL, INCLUDING THE SPECIFICATIONS. DO NOT RELY SOLELY ON ONE OR THE OTHER. ADVISE THE ARCHITECT OR ENGINEER IMMEDIATELY OF ANY CONFLICTS BETWEEN THE TWO. IF NO TIMELY RESPONSE IS RECEIVED FROM THE ARCHITECT OR ENGINEER, ASSUME THE MORE EXPENSIVE OR MORE RESTRICTIVE CONDITION WILL PREVAIL.
- SITE AND/OR EXISTING CONDITIONS DRAWINGS ARE BASED ON CASUAL OBSERVATIONS, NOT EXHAUSTIVE EXAMINATIONS. CONTRACTOR SHALL ADVISE ARCHITECT IMMEDIATELY OF ANY CONDITIONS ON THE SITE WHICH ARE AT VARIANCE WITH THE DRAWINGS OR SPECIFICATIONS.
- DO NOT CUT OR MODIFY ANY STRUCTURAL ITEM WITHOUT FIRST REVIEWING THE PROPOSED MODIFICATION WITH THE ARCHITECT AND SUBMITTING A PLAN FOR ANY TEMPORARY SHORING NECESSARY.
- ALL MATERIALS SHALL BE NEW AND INSTALLED TO MANUFACTURER'S WRITTEN SPECIFICATIONS.
- PROVIDE ALL NECESSARY BARRIERS AND SAFETY SIGNAGE NECESSARY FOR A SAFE WORK ENVIRONMENT. CONFORM TO ALL LOCAL, COUNTY, STATE, AND FEDERAL REQUIREMENTS WHICH APPLY.
- WHERE AN ITEM OR SYSTEM IS SHOWN TO BE INCLUDED IN THE WORK, IT SHALL BE PROVIDED AS A COMPLETE, OPERABLE, CODE-COMPATIBLE ITEM OR SYSTEM. THE CONTRACTOR SHALL INCLUDE ALL CONNECTIONS, SWITCHING, POWER, VENTILATION AND ANY OTHER ACCESSORIES NECESSARY TO PROVIDE A COMPLETE, OPERABLE ITEM OR SYSTEM.
- ROUTING OF ELECTRICAL WIRING, PLUMBING LINES (WATER SUPPLY, WASTE, DRAIN, VENTS), AND DUCTWORK WHERE SHOWN ON PLANS IS SCHEMATIC. IT IS THE RESPONSIBILITY OF EACH CONTRACTOR/ SUBCONTRACTOR TO COORDINATE INSTALLATION OF THESE ITEMS WITH ONE ANOTHER.
- LOCATION OF HVAC EQUIPMENT - RTUs, AIR HANDLERS, CONDENSERS, EXHAUST FANS, ETC - IS SCHEMATIC. COORDINATE THE FINAL LOCATIONS WITH OTHER CONSIDERATIONS AND CONFIRM WITH ARCHITECT.
- RENDER ALL PENETRATIONS THROUGH BUILDING'S EXTERIOR ENCLOSURE WEATHER TIGHT.
- PAINT ALL ROOF AND/OR WALL PENETRATIONS TO MATCH (AS CLOSELY AS IS PRACTICAL) THE ADJACENT ROOF OR WALL MATERIAL.
- COMMENCING INSTALLATION OF ANY ITEM, EQUIPMENT OR SYSTEM INDICATES ACCEPTANCE OF ANY PRE-EXISTING CONDITION UPON WHICH THE SUBSEQUENT CONSTRUCTION IS DEPENDENT OR ATTACHED TO OR SUPPORTED ON. FOR EXAMPLE, BEGINNING FLOORING INSTALLATION REPRESENTS ACCEPTANCE OF THE SUB FLOOR CONSTRUCTION AND/OR PREPARATION.
- IN ALL MATTERS RELATING TO INTERPRETATION AND/OR ENFORCEMENT OF THE APPLICABLE CODES, DESIGNATED HERCULANEUM CITY OFFICER SHALL BE CONSIDERED THE AUTHORITY HAVING JURISDICTION.

COMMISSION NUMBER
15-055-B

DRAWN BY **mjb**
CHECKED BY **FFF**
DATE **3/1/2016**

Final Documents;
Issued for Bidding
& Construction
with AHJ Issued
Permits

PLAN STATUS

STATE OF MISSOURI
FRANK F. FREINER
P.E. #18743
PROFESSIONAL ENGINEER
5-4-16
Frank F. Freiner
Prof'l Engineer
MO Lic: #018743

B
BACON
COMMERCIAL
DESIGN LLC

ARCHITECTURAL
DESIGN and
CONSULTING

po box 605
crystal city
mo 63019
(636) 933-0007

corporate authority
certificate #: 200607290

JEFFERSON CO.
(MISSOURI)
PUBLIC WORKS
DEPARTMENT

Jason Jonas, P.E.
Director
Remodel Existing
Building at
1403 Herculaneum
Industrial Drive;
Herculaneum, MO

New County
Emergency
Management &
Operations
Center
Phases 2 & 3
COMMISSION

ELECTRICAL -
LIGHTING PLAN

SHEET TITLE

SHEET NUMBER

E-2
OF 2