

MATAWAN BOROUGH

MONMOUTH COUNTY

NEW JERSEY

**CONTRACT NAME: BURROWES MANSION
STRUCTURAL REPAIRS AND ELECTRICAL UPGRADES**

FOR THE

BOROUGH OF MATAWAN

THE HONORABLE JOSEPH ALTOMONTE, MAYOR

MATAWAN BOROUGH COUNCIL

**Stephanie Buckel
Brett Cannon
Deanna Gunn**

**Brian Livesey
Charles Ross
Melanie S. Wang**

**Borough Administrator
Scott Carew**

AUGUST 1, 2022

Structural Repairs & Electrical Upgrades
Burrowes Mansion
Matawan, NJ

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AUGUST 1, 2022
Eric Holtermann, AIA
21-AI-00927700

NOTICE TO BIDDERS

The Borough of Matawan invites sealed bids for:

**Contract Name: BURROWES MANSION
STRUCTURAL REPAIRS AND ELECTRICAL UPGRADES
THE BOROUGH OF MATAWAN**

Sealed bids will be opened and read in public for consideration by the Borough of Matawan, 201 Broad Street, Matawan, New Jersey 07747 **Thursday, September 8, 2022 11:00 am prevailing time.** All bids shall be received at the Borough of Matawan, Clerk's Office in the Borough Administration Building any time prior to 10:45 a.m. Thereafter (10:45 a.m. – 11:00 a.m.) a representative of the Borough will be present in the Borough Administration Building Counter and will receive bids at such place. Bids arriving after 11:00 a.m. will not be accepted. Bids will be opened in the Borough Conference Room of the Municipal Building.

There will be a pre-bid meeting held at 10:00 am on Tuesday, August 9, 2022 at the Burrowes Mansion, 94 Main Street, Matawan, NJ 07747

All bids shall be presented to the Borough of Matawan by parties bidding or their agents previous to the time designated, or when called for by the Borough of Matawan.

Bids shall be made on the standard proposal form and be enclosed in a sealed envelope addressed to the Matawan Borough Clerk at the above address. The name and address for the bidder and the name of the item must be printed on the face of the envelope. One original and one copy of the bid proposal must be submitted. Bids will be rejected if not submitted within time, date and at place designated.

In all cases, in which a bid is delivered by public or private mailing, or hand delivered, the following address and notation shall appear prominently on the front of the outside envelope:

**Contract Name: BURROWES MANSION
STRUCTURAL REPAIRS AND ELECTRICAL UPGRADES
THE BOROUGH OF MATAWAN**

Borough Clerk
Matawan Borough
201 Broad Street
Matawan, NJ 07747

The bid documents shall be placed inside an envelope which shall have the following endorsement in the upper right corner of the envelope:

**Contract Name: Burrowes Mansion
STRUCTURAL REPAIRS AND ELECTRICAL UPGRADES
Bid opening date: September 8, 2022
Bid Opening time: 11:00 am prevailing time**

Bidders who elect to utilize public or private mailing for delivery of bid assume the burden of correctly addressing the envelope.

The guaranty accompanying the bid proposal shall be given in the amount of ten percent (10%) of the maximum delivered price, but not to exceed twenty thousand dollars (\$20,000), and may be given at the option of the bidder by a certified check or a bid bond from a reputable insurance company licensed in the State of New Jersey.

Bidders shall comply with the Affirmative Action Requirements set forth in N.J.S.A. 10:5-31 et seq. and N.J.A.C. 17:27, as amended from time to time and the Americans with Disabilities Act, P.L. 101-336, in accordance with 42 U.S.C. S12101 et seq.

The Borough Council reserves the right to reject any and all bids for the above listed contract in whole and/or in part which do not comply with the specification and/or the statutory requirements. The Borough Council reserves the right to waive informalities as the Borough may deem to be in its best interest.

All Contract documents are to be submitted intact in accordance with bidder's checklist. All erasures, interpolations, and other physical changes in the bid form shall be signed or initialed by the bidder.

Karen Wynne
Borough Clerk

BID DOCUMENT SUBMISSION CHECKLIST

**BURROWES MANSION
STRUCTURAL REPAIRS AND ELECTRICAL UPGRADES
FOR
THE BOROUGH OF MATAWAN**

The bid document is to be returned in the exact same page order that it was received in.

**A. Failure to submit the following documents is a mandatory cause for the bid to be rejected.
(N.J.S.A. 40A:11-23.2)**

Required with Submission
Of Bid
(Borough's checkmarks)

Initial each item
Submitted with Bid
(Initial each item)

√	A bid guarantee as required by <u>N.J.S.A. 40A:11-21</u>	
√	A certificate from a surety company, pursuant to <u>N.J.S.A. 40A:11-22</u>	
√	A Business Registration Certificate <u>N.J.S.A. 52:32-44</u>	
√	A listing of subcontractors as required by <u>N.J.S.A. 40A:11-16</u>	
√	A Stockholder Disclosure Certification required by <u>N.J.S.A. 52:25-24.2</u>	
√	Public Works Contractor Registration as required by <u>N.J.S.A. 34:11-56.48</u>	
√	If applicable, bidder's acknowledgement of receipt of any notice(s) or revision(s) or addenda to an advertisement, specifications or bid document(s)	
√	Contractor Qualification Statement	

**B. Failure to submit the following documents may be a cause for the bid to be rejected.
(N.J.S.A. 40A:11-23.1b.)**

Required with
submission of bid
(Borough's
checkmarks)

Initial each item
submitted with bid
(Bidder's initials)

Required with
submission of bid
(Borough's checkmarks)

Initial each item
submitted with bid
(Bidder's initials)

√	A Bid Proposal Form	
√	Bidder's Qualification Sheet	
√	Checklist of required documents signed below	
√	Experience Sheet	
√	American with Disabilities Act	

√	Affirmative Action Requirements	
√	Bidders Personnel	
√	Submission of a Non-Collusion Affidavit (this form must be Notarized)	
	Resolution of Authorization if Bidder is a Corporation	
	Corporate Resolution (if applicable)	

DEFINED TERMS

Wherever the words defined in the Article or pronouns in place of them are used in the Contract and the Specifications, their intent and meaning shall be interpreted as follows:

As Directed, As Required, Etc.

Wherever in the specifications the words "as directed", "as required", "as permitted", or words of like import are used, it shall be understood that the direction, requirements, or permission of the designated contact person for each site is intended, and similarly the works of like import, shall mean approved by or acceptable and satisfactory to the contact person for each site.

Bid

The offer or proposal of the Bidder submitted on the prescribed form setting forth the prices for the work to be performed.

Bidder

Any individual, firm or corporation submitting a proposal for the work contemplated acting directly or through a duly authorized representative.

Change Order

A written order to the Contractor signed by the Owner authorizing an addition, deletion or revision of the work, or an adjustment of the contract amount or contract time.

Contract

The agreement covering the performance of the work, together with all supplementary documents, including Notice to Contractors, Information for Bidders, Proposal, Executed Contracts, Contract Bond, General Conditions, Specifications including General Specifications are to be treated as one instrument whether or not set forth at length in the form of the contract.

Contract Price

The total moneys payable to the Contractor under the Contract Documents.

Contract Time

The number of calendar days stated in the Contract for the completion of the work.

Contractor

The party of the second part designated in the contract entering into the contract for the performance of the work required by it acting directly or through agents or employees.

Counsel

The person or firm holding the position or acting in the capacity of legal counsel for the Owner in the performance of the work contemplated.

Modification

- (a) a written amendment of the Contract Documents signed by both parties, or (b) a change order, or (c) a written clarification or interpretation issued by the Borough Attorney.

Owner

A public body or authority, association, partnership, corporation or individual for whom the work is to be performed; the party of the first part in the Contract.

Personal Injury

Shall be interpreted to mean "Bodily Injury" for insurance coverage purposes.

Proposal

The approved prepared form on which the Bidder will or did submit his, their or its prices for the work contemplated.

Proposal Security

The security designated in the proposal, to be furnished by the Bidder as a guaranty of good faith to enter into a contract with the Owner if the work is awarded to him.

Specifications

All of the specifications and modifications thereof appended hereto, pertaining to the method or manner of performing the work or to the quantities or qualities of materials to be furnished.

Subcontractor

Any individual, firm, partnership, or corporation having a direct contract with the contractor for doing work or for furnishing material, worked to a special design according to the Plans or Specifications of this work, but not including those who merely furnish material not so worked.

Surety

The corporate body which is bound with and for the Contractor who is primarily liable and which engages to be responsible for his payment of all debts pertaining to and for his acceptable performance of the work which he has contracted.

Borough of Matawan

The Borough of Matawan, a Municipal Corporation of the State of New Jersey with principal officials at 201 Broad Street Matawan, New Jersey, being the party of the first part, or any officer or agent duly authorized to act on its behalf.

Work

Any and all obligations, duties and responsibilities necessary to the successful completion of the project under the Contract Documents, including the furnishing of all labor, materials, equipment and other incidentals.

INSTRUCTIONS TO BIDDERS

RECEIPT OF BID: Bids will be opened at the time and place specified in the "Notice to Bidders". The Borough suggests that all bids be delivered by hand to the Borough Manager at the Municipal Building and takes no responsibility for the receipt of bids through the U.S. Postal Service or other courier services. No bids will be accepted after the time designated for the opening of bids.

BID FORM: Bids must be submitted on the "Bid Proposal" form which is included in the bid package. All blank spaces must be filled in. All proposals shall be typewritten or penned on the forms. Unit prices and totals must be inserted in the space provided. Insert N/A in the blanks if "not applicable". Proposals showing any erasure, alteration or interlineations must be initialed by the bidder in ink. Failure to comply may be cause for rejection of the bid. Where discrepancies occur between the unit figure and the extension, the unit price will prevail.

The bid form is included in the contract documents; additional copies may be obtained from the Purchasing Agent.

Bid forms must be completed in ink or typed. The bid price of each item on the form must be stated in words and numerals; in case of a conflict, words will take precedence.

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 shall be affixed and attested by a secretary or an assistant secretary. The corporate address and state of incorporation shall be shown below the signature.

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

All names must be typed or printed below the signature.

The bid shall contain an acknowledgement of receipt of all addenda (the numbers of which shall be filled in on the bid form).

If a unit price or a lump sum already entered by the Bidder on the bid form is to be altered, it shall be crossed out with ink and the new unit price or lump sum bid entered above or below it, and initialed by the bidder in ink.

The bids received will be compared on the basis of the summation of the lump sum amounts bid, and the products of the quantities of items listed at the unit prices bid. In case of a discrepancy between the total shown in the bid and that obtained by adding the products of the quantities of items at the unit prices, the unit prices as written out in words in the proposal shall govern any errors found in said products, and in the addition, will be corrected.

SIGNATURE ON BID FORM: The bid proposal must be signed by the individual bidder and his signature witnessed by another person. If the bidder is a partnership, all partners must sign and their signatures witnessed by another person. If the bidder is a corporation, the bid must be signed in the name of the corporation by a chief executive officer and witnessed by a recording officer.

BONDS OR SECURITY REQUIRED:

BID SECURITY: Refer to the Checklist of Required Documents to see if bid security is required for the attached proposal. The amount and type of bid security is stated in the advertisement and Notice to Bidders. The required security must be in the form of a certified check, cashier's check, or surety bid bond of the Bidders, payable to the Borough. The amount of the bid security shall be 10% of the total bid, but not more than \$20,000. If the Bid security is in the form of a surety bid bond, said surety shall be licensed to conduct business in the State of New Jersey and named in the current list of "Surety Companies Acceptable on Federal Bonds", as published in the Federal Register by the Audit Staff Bureau of Accounts, U.S. Treasury Department. The Bid Security of the successful bidder will be retained until he/she has executed the Agreement and has furnished the required contract security within 10 days of the Notice of Award. The Borough may annul the Notice of Award and the bid security of that bidder will be forfeited.

Bid Security will be returned to all except the three apparent lowest bidders within ten (10) working days after the opening of bids, and to the three lowest bidders within three working days after the accepted bidder has executed the contract. If no contract has been executed within sixty (60) days after the opening of bids, the amount of his/her proposal guarantee will be returned upon the demand of any bidder, provided that he/she has not been notified of the acceptance of his/her bid.

PERFORMANCE BONDS: When required as part of the contract documents, the awarded vendor shall within ten (10) days after the award of the contract, obtain, pay for and deliver to the Borough of Matawan, a performance bond for one hundred percent (100%) of the total contract sum satisfactory to the Borough and executed by a surety company licensed to do business in the State of New Jersey. Such a bond shall bear the same date as, or dates subsequent to, the date of the contract. The said bond shall assure fulfillment of the contract in all respects and shall provide for payment in the event of the contractor's failure to perform all of its obligations according to the contract and make full reimbursement to the Borough of Matawan for all expenses incurred in making good any default. This bond shall also contain a waiver of notice being required for alternations, additions, deductions, extensions of time or other modifications of the contract as ordered.

MAINTENANCE BONDS:

Unless otherwise specified, before final payment is made as herein provided, the Contractor shall furnish a Surety Corporation Bond to the Owner in a sum equal to:

1. Fifty percent (50%) of the final adjusted Contract amount if such amount be \$25,000 or less;
2. Thirty percent (30%) of the final adjusted Contract amount if such amount be greater than \$25,000 but less than \$75,000; and
3. Ten percent (10%) of the final adjusted Contract amount If such amount be \$75,000 or more

The Bond and Surety Corporation shall be satisfactory to the Owner and the Bond shall remain in full force and effect for a period of one (1) year from the date of final payment for the work by the Owner and shall provide that the Contractor and the Surety guarantees to replace for the said period of one year from the date of final payment for the work, all work performed and/or all materials furnished that was not performed or were not furnished according to the terms and performance requirements of the Contract Documents, and will make good any defects thereof which become apparent before the expiration of one (1) year.

CONSENT OF SURETY: The consent of surety form shall be returned with the bid proposal if the contract documents require a performance bond. Consent of surety which reserves any right for the surety, after the award of the contract to the bidder, to decline to issue the performance bond will not be accepted. Bids accompanied by such consent of surety will be rejected.

ADDENDA: Any addendum issued from time to time to provide additional information to the bidders shall become an integral part of this bid package. Receipt of addendum shall be acknowledged by the bidders in the space provided on the bid proposal form.

QUESTIONS REGARDING PLANS & SPECIFICATIONS: Should any bidder be in doubt as to the intent of the plans and/or specifications, he should immediately notify the Architect, HMR Architects, 821 Alexander Road Suite 115, Princeton, NJ 08540 - Kurt Leasure at leasure@hmr-architects.com in writing, who will then send a written addendum

to all bidders recorded as receiving bidding documents covering the point in question. Bidders may not rely on oral responses to inquiries. All questions must be received by the Architect **no later than Thursday, August 25, 2022 at 4:00 pm Eastern Time**. Questions received after this date and time will not be answered. Only questions answered by formal written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

Before submitting bids, the bidder shall apply in writing to the Purchasing Agent for clarification or interpretation of any conflicting information between two or more statements in the plans and specifications. If such clarification is not requested before bidding, the bidder shall be responsible for doing such work and furnishing such materials as is necessary to comply with whichever interpretation of the plans and specifications the Borough may, during construction, judge to be proper.

QUALIFICATIONS OF BIDDERS

To demonstrate his/her qualifications for the project, each Bidder must be prepared to submit within five (5) days of the Borough's request evidence of authority to conduct business in the jurisdiction where the project is located.

EXAMINATION OF CONTRACT DOCUMENTS AND SITE

Before submitting his/her bid, each Bidder should (a) examine the contract documents thoroughly, (b) visit the sites to familiarize himself/herself with the local conditions that may in any manner affect performance of the work, (c) familiarize himself/herself with Federal, State and Local Laws, Ordinances, Rules and Regulations affecting performance of the work; and (d) carefully correlate his/her observations with the requirements of the contract documents.

Reference is made to the General Requirements (where applicable) of the specifications for the identification of those surveys and investigation reports of subsurface or latent physical conditions at the site or otherwise affecting performance of the work. The Borough will make copies of such surveys and reports available to any Bidder requesting them. Before submitting his/her bid, each Bidder will, at his own expense, make such additional surveys and investigations as he may deem necessary to determine his bid price for performance of the work within the terms of the contract documents.

The submission of a bid will constitute an incontrovertible representation of the Bidder that he/she has complied with every requirement of the examination of contract documents and site paragraphs.

WITHDRAWING BID: The Borough reserves the right to reject any or all bids and to waive any minor informality in any bid should it be deemed in the best interest of the Borough to do so. Bids may be rejected for any of the following reasons:

1. Failure to complete the Ownership Disclosure Statement.
2. Failure to complete the Affidavit of Non-Collusion.
3. Failure to properly complete the Bid Proposal form.
4. Failure to submit bid security (if required).
5. Failure to complete Affirmative Action Certification.
6. Failure to comply with specifications (insertion of additional conditions, provisions, or stipulations).
7. Failure to provide Consent of Surety
8. Failure to provide listing of subcontractors
9. Failure to sign addenda page
10. Failure to provide Business registration certificate.

PROCEDURES ON AWARD OF CONTRACT:

THE BOROUGH RESERVES THE RIGHT TO REJECT ANY AND ALL BIDS, AND WAIVE ANY AND ALL INFORMALITIES, AND THE RIGHT TO DISREGARD ALL NONCONFORMING OR CONDITIONAL BIDS OR COUNTERPROPOSALS.

The Contract shall be awarded to one Contractor based on the lowest responsible, responsive bid and completion of all qualifications set forth in the Instructions to Bidders and Specifications. Low Bid shall be determined by the lump sum total amount of all four entities specified.

In evaluating bids, the Borough shall consider the qualifications of the Bidders whether or not the bids comply with the prescribed requirements, and alternates and unit prices if requested in the Bid Forms. The Borough may consider the qualifications and experience of subcontractors and other persons and organizations, including these who are to furnish the principal items of material or equipment proposed for the portions of the work as to which the identity of subcontractors and other persons and organizations must be submitted as specified in the Supplementary Conditions or Specifications. The Borough may conduct such investigations as it deems necessary to establish the responsibility, qualifications, and financial ability of the Bidders, subcontractors and other persons and organizations to do the work in accordance with the contract documents to the Borough's satisfaction within the prescribed time. The Borough reserves the right to reject the bid of any Bidder who does not pass any such evaluation to the Borough's satisfaction.

If a contract is to be awarded, it will be awarded to the lowest responsible bidder whose evaluation by the Borough indicates to the Borough that the award will be in the best interests of the project. The Borough reserves the right to award the bid to more than one vendor when it is deemed to be in the best interest of the Borough to do so.

If the contract is to be awarded, the Borough will give the apparent successful Bidder a Notice of Award within 60 days after the day of the bid opening. Exception to this schedule would be in accordance with N.J.S.A 40A:11-24 which provides that "any bidders who consent thereto may, at the request of the contracting unit, have their bids held for consideration for such longer period as may be agreed". All prospective bidders are advised of this schedule since all proposals must be firm when bid, and must remain so for 60 days or such longer period as the Borough and the bidders may agree.

Simultaneously, with delivery of the executed counterparts of the Agreement to the Borough, contractor shall deliver to the Borough the required contract security.

NOTIFICATION OF AWARD: On passage of a Borough Resolution awarding the contract, the Borough of Matawan, Borough of Matawan, shall separately forward three (3) sets of contract documents to the successful bidder for execution and delivery. Within ten (10) days of the date of the award of the contract, the successful bidder shall

return all (3) sets of the contract documents to each entity with a proper performance bond and requisite insurance certificates attached if it is required - refer to Checklist of Required Documents.

If approved as to form and execution, the contract documents will then be submitted to the Governing Bodies and or Designated Committees of Authority for execution on behalf of each individual entity. A fully executed copy will then be returned to the successful bidder by each entity. No Resolution of Award will become binding at any time before the contract documents have been executed by appropriate approving authorities.

Should any successful bidder, upon being notified, fail to execute a contract with ten (10) days of such notification with the Borough of Matawan, the Borough will be free to award the contract to another bidder, and the Borough shall have the right to proceed against the guaranty accompanying the bid.

EQUAL OR TIE BIDS: The Borough of Matawan reserves the right to award, in its discretion, to any of the tie bidders which serves the best interest of the Borough with reference to the information submitted with the proposals.

ASSIGNING THE CONTRACT: The contract shall not be sublet, assigned, pledged, hypothecated or sold, in whole or in part, without the written permission of the Borough.

SUBMISSION OF BIDS: Bids shall be submitted at the time and place indicated in the advertisement, and Notice to Bidders shall be included in an sealed envelope, marked with the project title and name and address of the bidder and accompanied by the Bid Security and other required documents.

MODIFICATION AND WITHDRAWAL OF BIDS: Bids may be modified or withdrawn by 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.

OPENING OF BIDS: Bids will be opened as indicated in the advertisement and Notice to Bidders.

BIDS TO REMAIN OPEN: All bids shall remain open until such time as the Borough has entered into a contract with the successful low bidder, or a period not to exceed sixty (60) days after the day of the bid opening. The Borough, in its sole discretion, may release any bid and return the Bid Security prior to that date.

Bid Security in the form of certified or cashier's checks will be returned to all, except the three apparent lowest bidders within ten working days after the opening of bids, and to the three lowest bidders, within three working days after the accepted bidder has executed the contract. If no contract has been executed within sixty (60) days after the opening of bids, the amount of his/her proposal guarantee will be returned upon the demand of any bidder, provided that he/she has not been notified of the acceptance of his/her bid.

PAYMENT ON CONTRACT: The Borough of Matawan shall be invoiced and make payments to the contracted Contractor separately, as individual entities. In no way shall one entity be held liable for outstanding payments due to the Contractor for work performed as a part of another entities contract.

SALES TAX: As a New Jersey governmental entity or school district, the Borough of Matawan are exempt from the requirements under New Jersey State Sales and Use Tax (N.J.S.A. 54:32B-1 et Seq.), and does not pay any sales or use taxes. Bidders should note that they are expected to comply with the provisions of said statute and the rules and regulations promulgated thereto to qualify them for examinations and reference to any and all labor, services, materials, and supplies furnished to each entity. Contractors may not use the tax exempt status to purchase supplies, materials, service or equipment.

AFFIDAVIT OF NON-COLLUSION: This affidavit must be submitted with the bid proposal form and it must be notarized.

AMERICAN GOODS: During the performance of this contract, the contractor agrees to comply with the provisions of N.J.S.A. 40:11-18.

RIGHT TO KNOW: All potentially hazardous materials or substances must be properly labeled in full in accordance with the New Jersey Right to Know Law – N.J.S.A. 34:5A-1 et seq. All contractors or vendors who need additional information about the New Jersey Right to Know Law are to contact the New Jersey Department of Health, Right to Know Program.

THE CONTRACT - The following shall be deemed to be part of the Contract:

- * Notice to Bidders
- * Information for Bidders
- * Contract Drawings
- * Specifications
- * Proposal
- * All Addenda issued by the Borough prior to the receipt of bids

All of the above, taken as a whole, shall constitute the Contract Documents. Any work exhibited in the one and not the other shall be executed just as if it had been set forth in both, in order that the work shall be completed in every respect according to the complete design as decided and determined by the Borough.

INSURANCE - The Contractor will not be allowed to begin work under this contract until he has all insurance required under the contract documents and the insurance has been approved by the Borough. The insurance required shall be maintained in full force and effect until all work to be performed under the terms of the contract is satisfactorily completed and accepted by the Borough. The Contractor shall furnish the Borough of Matawan with satisfactory proof of carriage of the insurance required by submitting the original insurance policies and endorsement or properly executed conformed copies. Each insurance policy and endorsement shall contain undertaking by the insurance carrier not to cancel the policy except upon thirty (30) days notice to the Borough. The policies and endorsements shall be specifically referred to each entity as an insured party of this contract and shall state that the insurance as provided conforms to the requirements of these contract documents. All insurance required by this contract shall be placed with responsible insurance companies authorized to do business in the State of New Jersey which are satisfactory to the Borough.

The bidder to whom the contract is awarded for any service work or construction work shall secure, pay the premiums for and keep in force until the contract expires, insurance of the types and amounts listed below:

General Liability:

\$2,000,000	General Aggregate
\$1,000,000	Products
\$1,000,000	Personal Injury
\$1,000,000	Each Occurrence
\$50,000	Fire Damage
\$5,000	Medical Expense

The Contractor must present to each individual entity an insurance certificate in the above types and amounts before any work or service begins.

The contractor must include the following clause on the insurance certificate:

“The Borough of Matawan is named as an additional insured”

Workers Compensation:

Bodily Injury by Accident	\$500,000 Each Accident
Bodily Injury by Disease	\$500,000 Policy Limit
Bodily Injury by Disease	\$500,000 Each Employee
Contract Liability	Same as General Liability
Automobile Liability	\$1,000,000 Per Occurrence

Evidence of adequate Workers Compensation Insurance as required by the laws of the State of New Jersey and the United States, must be available for perusal. The minimum limits are state above unless a greater amount is required by law.

“INFORMATION FOR BIDDERS” AS PART OF THE CONTRACT: The terms and provisions set forth under the heading “INFORMATION FOR BIDDERS” are hereby made a part of the terms and conditions of the proposed contract.

ERRORS IN PRICE CALCULATION - Any discrepancy between a numerical price and a price written in words shall be resolved in favor of the price as written in words.

PERIOD OF CONTRACT – The period of the contract shall be for one year as stated in the specifications of each individual entity with an optional twelve month additional contract term.

AVAILABILITY OF FUNDS - The Borough’s obligation hereunder is contingent upon the availability of appropriated funds from which payments for contract purposes can be made. No legal liability on the part of the Borough for payment of any money shall arise unless and until funds are made available each year.

TRANSITIONAL PERIOD - In the event the services are terminated either by the contract expiration or by termination by the Borough of Matawan, it shall be incumbent upon the contractor to continue the service until new services can be completely operational. At no time shall this service extend more than 90 days beyond the expiration date of the existing contract. Vendor will be reimbursed for this service at the prior contract rate.

CONTRACTOR’S REQUIREMENTS FOR REGISTRATION – All Contractors must adhere to the provisions of the Public Works Contractor Registration Act – N.J.S.A. 34:11-56.48 et seq., as so amended by P.L.2003,c.91. The PWCRA requires that “No Contractor shall bid on any contract for public work... unless the contractor is registered pursuant to this act.” The law requires that all contractors and sub-contractors named in the proposal possess a valid certificate at the time the proposal is received by the contracting unit, in this case the Borough of Matawan.

NEW JERSEY BUSINESS REGISTRATION REQUIREMENTS- The contractor shall provide written notice to its subcontractors and suppliers of the responsibility to submit proof of business registration to the contractor. The requirement of proof of business registration extends down through all levels (tiers) of the project.

Before final payment on the contract is made by the contracting agency, the contractor shall submit an accurate list and the proof of business registration of each subcontractor or supplier used in the fulfillment of the contract, or shall attest that no subcontractors were used.

N.J.S.A. 52:32-44 requires that each bidder (contractor) submit proof of business registration with the bid proposal. Proof of registration shall be a copy of the bidder's Business Registration Certificate (BRC). A BRC is obtained from the New Jersey Division of Revenue. Information on obtaining a BRC is available on the internet at www.nj.gov/njbgs or by phone at (609) 292-1730. N.J.S.A. 52:32-44 imposes the following requirements on contractors and all subcontractors that **knowingly** provide goods or perform services for a contractor fulfilling this contract:

1. The contractor shall provide written notice to its subcontractors and suppliers to submit proof of business registration to the contractor;
2. Prior to receipt of final payment from a contracting agency, a contractor must submit to the contacting agency an accurate list of all subcontractors or attest that none was used;
3. During the term of this contract, the contractor and its affiliates shall collect and remit to the Director, New Jersey Division of Taxation, the use tax due pursuant to the Sales and Use Tax Act, (N.J.S.A. 54:32B-1 et seq.) on all sales of tangible personal property delivered into this State.

A business organization that fails to provide a copy of a business registration as required pursuant to section 1 of P.L. 2001,c.134 (C.52:32-44 et al.) or subsection e. or f. of section 92 of P.L.1977,c.110(C.5:12-92),or that provides false business registration information under the requirements of either of those sections, shall be liable for a penalty of \$25 for each day of violation, not to exceed \$50,000 for each business registration copy not properly provided under a contract with contracting agency.

PREVAILING WAGE ACT (WHEN APPLICABLE) – Pursuant to NJSA 34:11-56.25 et seq. successful bidders on projects for public works shall adhere to all requirements of the New Jersey Prevailing Wage Act. The contractor shall be required to submit a certified payroll record. Such certified payroll record must be submitted within ten (10) days of the payment of wages. The contractor is also responsible for obtaining and submitting all subcontractors' certified payroll records within the aforementioned time period. The contractor shall submit said certified payrolls in the form set forth in NJAC 12:60-6.1(c). It will be the contractor's responsibility to obtain any additional copies of the certified payroll form to be submitted by contacting the Office of Administrative Law, CN 049, Trenton, New Jersey 08625 or the New Jersey Department of Labor, Division of Workplace Standards.

ACKNOWLEDGMENT OF REVISIONS OR ADDENDA

**BURROWES MANSION
STRUCTURAL REPAIRS AND ELECTRICAL UPGRADES**

Pursuant to N.J.S.A. 40A:11-23.1a, the undersigned bidder hereby acknowledges receipt of the following notices, revisions, or addenda to the bid advertisement, specifications or bid documents. By indicating date of receipt, bidder acknowledges the submitted bid takes into account the provisions of the notice, revision, or addendum. Note that the local unit's record of notice to bidders shall take precedence and that failure to include provisions of changes in a bid proposal may be subject for rejection of the bid.

I _____, acknowledge receipt of the following addenda and or revisions. They are as follows:

Local Unit Reference Number or Title of Addendum/Revision	How Received (mail, fax, pick-up, etc.)	Date Received

Acknowledgement by bidder:

Name of Bidder: _____

By Authorized Representative:

Signature: _____

Print Name and Title: _____

Date: _____

NON-COLLUSION AFFIDAVIT

STATE OF NEW JERSEY

COUNTY OF _____ §:

I, _____ of the _____

of _____ in the County of _____

in the State of _____ being of full age, and being duly sworn according to law on my oath
depose and say that:

I am _____

of the firm of _____

The Bidder making the proposal for the above named project, attests that they execute the said proposal with full authority to do so; that said Bidder has not directly or indirectly entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free, competitive bidding in connection with the above named project; and that all statements contained in said proposal and in this affidavit are true and correct, and made with full knowledge that the _____ of _____ relies upon the truth of the statements contained in said proposal and in the statements contained in this affidavit in awarding the contract for said project.

I further warrant that no person or selling agency has been employed or retained to solicit or secure such contract upon agreement or understanding for a commission, percentage, brokerage or contingent fee, except bona fide employees or bona fide established commercial or selling agencies maintained by

NAME OF CONTRACTOR (N.J.S.A. 52:34-15)

Subscribed and sworn to _____

Before me this _____ day _____

Of _____ 20 _____
(Also type or print name of affiant under signature)

NOTARY PUBLIC OF

My Commission Expires _____

Failure to complete, sign and notarize this form will result in automatic rejection of bid.

STOCKHOLDER DISCLOSURE CERIFICATION

(If bidder is a sole proprietorship, check here [] and do not complete this statement.)

The UNDERSIGNED, as bidder, in accordance with N.J.S.A. 52:25-24.2, declares and submits this Statement of Ownership:

Bidder is a Corporation [] Partnership [] Joint Venture []

[] I certify that the list below contains the names and home addresses of all stockholders holding 10% or more of the issued and outstanding stock of the undersigned.

[] I certify that no one stockholder owns 10% or more of the issued and outstanding stock of the undersigned.

Full Name of Individual (Stockholder) (Partner)	Home Address of Individual (Stockholder) (Partner)
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____
6. _____	_____
7. _____	_____

THIS STATEMENT MUST BE INCLUDED WITH BID SUBMISSION

Notes: Attach additional sheets in this format, if necessary.

Subscribed and sworn before me	_____
	Signature
This ____ day of _____ 20	
_____	_____
(Notary Public)	Print Name
My Commission expires:	_____
_____	Title (Corporate Seal)

Failure to complete, sign and notarize this form will result in automatic rejection of bid.

AFFIRMATIVE ACTION CERTIFICATION

If awarded a contract, all procurement and service contractors will be required to comply with the requirements set forth in N.J.S.A. 10:5-31 et seq. and N.J.A.C. 17:27. Within seven (7) days after receipt of the notification of intent to award the contract or receipt of the contract, whichever is sooner, the contractor should present one of the following to the Purchasing Agent:

- 1. A photocopy of a valid letter from the U.S. Department of Labor that the contractor has an existing federally-approved or sanctioned Affirmative Action Plan (good for one year from the date of letter).
OR
- 2. A photocopy of their approved Certificate of Employee Information Report.
OR
- 3. An Affirmative Action Employee Information Report (Form AA302)
OR
- 4. All successful construction contractors must submit within three days of the signing of the contract an Initial Project Manning Report (AA201) for any contract award that meets or exceeds the Public Agency bidding threshold (available upon request).

NO FIRM MAY BE ISSUED A CONTRACT UNLESS IT COMPLIES WITH THE AFFIRMATIVE ACTION REGULATIONS OF P.L.1975, C.127.

The following questions must be answered by all bidders:

1. Do you have a federally-approved or sanctioned Affirmative Action Program?

YES _____ NO _____

If yes, please submit a copy of such approval.

2. Do you have a State Certificate of Employee Information Report Approval?

YES _____ NO _____

If yes, please submit a copy of such certificate.

The undersigned contractor certifies that he is aware of the commitment to comply with the requirements of P.L.1975,c.127 and agrees to furnish the required documentation pursuant to the law.

Subscribed and sworn before me

Signature

This ____ day of _____ 20

(Notary Public)

Print Name

My Commission expires:_____

Note: a contractor's bid must be rejected as non-responsive if a contractor fails to comply with Requirements of P.L. 1975,c.127, within the time frame.

Failure to complete, sign and notarize this form will result in automatic rejection of bid.

EXHIBIT A

MANDATORY EQUAL EMPLOYMENT OPPORTUNITY LANGUAGE

N.J.S.A. 10:5-31 et seq. (P.L. 1975, C. 127)

N.J.A.C. 17:27

GOODS, PROFESSIONAL SERVICE AND GENERAL SERVICE CONTRACTS

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

The contractor or subcontractor, where applicable, will not discriminate against any employee or applicant for employment because of age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex. Except with respect to affectional or sexual orientation and gender identity or expression, the contractor will take affirmative action to ensure that such applicants are recruited and employed, and that employees are treated during employment, without regard to their age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex. Such action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Public Agency Compliance Officer setting forth provisions of this nondiscrimination clause.

The contractor or subcontractor, where applicable will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex.

The contractor or subcontractor, where applicable, will send to each labor union or representative or workers with which it has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the agency contracting officer advising the labor union or workers' representative of the contractor's commitments under this act and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

The contractor or subcontractor, where applicable, agrees to comply with any regulations promulgated by the Treasurer pursuant to N.J.S.A. 10:5-31 et seq., as amended and supplemented from time to time and the Americans with Disabilities Act.

The contractor or subcontractor agrees to make good faith efforts to employ minority and women workers consistent with the applicable county employment goals established in accordance with N.J.A.C. 17:27-5.2, or a binding determination of the applicable county employment goals determined by the Division, pursuant to N.J.A.C. 17:27-5.2.

The contractor or subcontractor agrees to inform in writing its appropriate recruitment agencies including, but not limited to, employment agencies, placement bureaus, colleges, universities, labor unions, that it does not discriminate on the basis of age, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex, and that it will discontinue the use of any recruitment agency which engages in direct or indirect discriminatory practices.

The contractor or subcontractor agrees to revise any of its testing procedures, if necessary, to assure that all personnel testing conforms with the principles of job-related testing, as established by the statutes and court decisions of the State of New Jersey and as established by applicable Federal law and applicable Federal court decisions.

In conforming with the applicable employment goals, the contractor or subcontractor agrees to review all procedures relating to transfer, upgrading, downgrading and layoff to ensure that all such actions are taken without regard to age, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex, consistent with the statutes and court decisions of the State of New Jersey, and applicable Federal law and applicable Federal court decisions.

The contractor shall submit to the public agency, after notification of award but prior to execution of a goods and services contract, one of the following three documents:

Letter of Federal Affirmative Action Plan Approval

Certificate of Employee Information Report

Employee Information Report Form AA302

The contractor and its subcontractors shall furnish such reports or other documents to the Div. of Contract Compliance & EEO as may be requested by the office from time to time in order to carry out the purposes of these regulations, and public agencies shall furnish such information as may be requested by the Div. of Contract Compliance & EEO for conducting a compliance investigation pursuant to **Subchapter 10 of the Administrative Code at N.J.A.C. 17:27.**

COMPANY: _____

NAME: _____

TITLE: _____

SIGNATURE: _____

DATE: _____

AMERICANS WITH DISABILITIES ACT

Equal Opportunity For Individuals With Disabilities

The Contractor and the Borough of Matawan do hereby agree that the provision of Title II of the Americans With Disabilities Act of 1990 (the "Act") (42 U.S.C. S12101 et seq.), which prohibits discrimination on the basis of disability by public entities in all services, programs and activities provided or made available by public entities, and the rules and regulations promulgated pursuant thereto, are made a part of this contract. In providing any aid, benefit or service on behalf of the Borough pursuant to this contract, the Contractor agrees that the performance shall be in strict compliance with the Act. In the event that the Contractor, its agents, servants, employees or subcontractors violate or are alleged to have violated the Act during the performance of this contract, the Contractor shall defend the Borough in any action or administrative proceeding commenced pursuant to this Act. The Contractor shall indemnify, protect and save harmless the Borough, its agents, servants and employees from and against any and all suits, claims, losses, demands or damages of whatever kind or nature arising out of or claimed to arise out of the alleged violation. The Contractor shall, at its own expense, appear, defend and pay any and all charges for legal services and any and all costs and other expenses arising from such action or administrative proceeding or incurred in connection therewith. In any and all complaints brought pursuant to the Borough grievance procedure, the Contractor agrees to abide by any decision of the Borough which is rendered pursuant to said grievance procedure. If any action or administrative proceeding results in an award of damages against the Borough or if the Borough incurs any expense to cure a violation of the ADA which has been brought pursuant to its grievance procedure, the Contractor shall satisfy and discharge the same at its own expense.

The Borough shall, as soon as practicable after a claim has been made against it, give written notice thereof to the Contractor along with full and complete particulars of the claim. If any action or administrative proceeding is brought against the Borough or any of its agents, servants, and employees, the Borough shall expeditiously forward or have forwarded to the Contractor every demand, complaint, notice, summons, pleading or other process received by the Borough or its representatives.

It is expressly agreed and understood that any approval by the Borough of the services provided by the Contractor pursuant to this contract will not relieve the Contractor of the obligation to comply with the Act and to defend, indemnify, protect, and save harmless the Borough pursuant to this paragraph.

It is further agreed and understood that the Borough assumes no obligation to indemnify or save harmless the contractor, its agents, servants, employees and subcontractors for any claim which may arise out of their performance of this agreement. Furthermore, the Contractor expressly understands and agrees that the provisions of this indemnification clause shall in no way limit the Contractor's obligations assumed in this agreement, nor shall they be construed to relieve the Contractor from any liability, nor preclude the Borough from taking any other actions available to it under any other provisions of this agreement or otherwise by law.

Signature

Date

BID SECURITY

This proposal is accompanied by bid security in accordance with the conditions stated in the Invitation to Bid.

The bid security in the form of:

- A. Surety Bid Bond _____
- B. Certified/Treasurer's Check _____
- C. Cashiers Check _____

The amount of _____ (\$ _____) payable to the
Borough of Matawan

The Bidder hereby agrees that if this proposal shall be accepted by the Borough, and the Bidder shall fail to execute and deliver the contract and the required Performance Bond or other required documents in accordance with the requirements of this proposal and other sections of the contract documents within the time specified, then the Bidder shall be deemed to have abandoned the contract and thereupon the proposal and acceptance shall be null and void and the security accompanying the proposal shall be forfeited to, and retained by, the Borough, as liquidated damages for such failure or neglect, and to indemnify the Borough for any loss which may be sustained by failure of the Bidder to execute the contract and furnish documents as aforesaid. Nothing in the specifications and contract documents shall prevent the Borough from recovering actual damages over and above the sum of the forfeited bid security.

In compliance with the laws of the State the Bidder is:

An Individual _____

A Partnership _____

of _____ having principal offices at

CONSENT OF SURETY

In consideration of the premises, and of one dollar to it in hand paid by the Bidder, the receipt whereof is hereby acknowledged, the undersigned consents and agrees that if the contract, for which the preceding estimate and proposal is made, be awarded to the corporation, person or persons making the same, it will become bound as surety and guarantor for its faithful performance, and will execute it as party of the third part thereto when required to do so by the Borough, and if said corporation, person or persons shall omit or refuse to execute said contract if so awarded, it will pay, on demand, to the said Borough any difference(s) between the sum bid by said corporation, person or persons and the sum which the said Borough may be obliged to pay the corporation, person or persons to whom the contract may be awarded; the amount in each case to be determined by the bids for said contract.

In witness whereof, said surety has set its seal and caused these presents to be signed by its duly authorized officers, this

_____ Day of _____ 2007.

ATTEST:

BY _____

_____ (SEAL)

Surety

ATTEST:

BY _____

Title

PREVAILING WAGE AFFIDAVIT

I herby certify as follows:

1. I am the duly authorized agent of _____ to make this certification on behalf of _____, the contractor.
2. I am compliant with N.J.S.A.34:11-56.25 et Seq. (Prevailing Wage Rates).
3. I have reviewed the prevailing wage rate determination within the bid package.
4. All contractors and subcontractors performing public works construction projects must follow payroll reporting requirements according to amended rules and regulations of the New Jersey Prevailing Wage Act. Certified payroll records must be submitted, within 10 days of the payment of wages, to the government entity that contracted the construction. Contractors and the subcontractors who fail to provide these records are subject to penalties of up to a maximum of \$250.00 for the first violation and up to \$500.00 for subsequent violations.
5. I have read this statement and I know the contents and know the same to be true to my own knowledge.
6. I, therefore, certify that the bid submitted herewith to be in compliance to the Prevailing Wage Rate.

Signature of Contractor

Print Name

Date

BIDDERS QUALIFICATION STATEMENT

1. How many years have you been in business under your present business name?

2. Have you, your organization, partners or officers failed to complete a municipal contract or defaulted under any such contract? If yes, please explain and list the municipality involved. (Attach a separate sheet, if necessary.)

3. Did you, your organization, partners or officers ever withdraw your bid after being designated the lowest bidder on a municipal contract? If yes, please explain. (Attach a separate sheet, if necessary.)

4. Have you, your organization, partners, or officers been a party to any law suits or legal actions, whether of a civil or criminal nature, arising out of or involving bid contracts or the performance thereof? If so, give details and disposition of the matter.

5. Are there any unsatisfied judgments recorded against you, your organization, partners, or officers? If so, give details, including the name and the address of each judgment creditor and the amount of each judgment.

6. The period of time you, your organization has been continuously engaged in this type of development, operation and maintenance program in New Jersey under the name in which the proposal is submitted.

Any information submitted in the Bidder's Qualification sheet which is false or misleading may be grounds for disqualification of the bidder and rejection to his bid.

BIDDERS PERSONNEL

NOTE: Give the names of all officers of corporation

NOTE: Give the name of the executive who will give personal attention to work whenever required.

SUBCONTRACTOR LIST

If needed in the performance of this bid, the following subcontractors will be employed to perform the following work:

1. Name & Phone #: _____

Address: _____

Work: _____

2. Name & Phone #: _____

Address: _____

Work: _____

3. Name & Phone #: _____

Address: _____

Work: _____

4. Name & Phone #: _____

Address: _____

Work: _____

5. Name & Phone #: _____

Address: _____

Work: _____

EXPERIENCE STATEMENT SHALL BE ATTACHED FOR EACH OF THE ABOVE SUBCONTRACTORS.

SITE VISITATION STATEMENT

I, _____

Of _____

the Bidder making Bid for Burrowes Mansion Structural Repairs and Electrical Upgrades certify that I or my authorized representative has personally inspected the job site.

By: _____
Signature

Title

Typed or Printed Name of Bidder

(Corporate Seal)

Subscribed and sworn to before me this _____ day of _____, 2007.

(Seal)

My Commission Expires On: _____

IMPORTANT: This form must be completed by Bidder

DEBARRED, SUSPENDED and DISQUALIFIED BIDDER AFFIDAVIT

STATE OF NEW JERSEY)
)
COUNTY OF)

I, _____ of the Borough of _____
_____ in the county of _____ and the State of _____
being of full age, being duly sworn according to law on my oath depose and say that;

I am _____, an officer of the firm(s) of _____
_____ the bidder making the proposal for the above named work, and that I executed the said proposal with
full authority to do so; that said bidder at the time of making this bid, {as applicable, insert "is" or "is not"}
included on the State of New Jersey, State Treasurer's List of Debarred, Suspended and Disqualified Bidders;
and that all statements contained in said proposal and in this affidavit are true and correct, and made with the
full knowledge that _____ as Local Unit relies upon the truth of the
statements contained in said proposal and in the statements contained in this affidavit in awarding the contract
for said work The undersigned further warrants that should the name of the firm making this bid appear on
the State Treasurer's List of Debarred, Suspended and Disqualified Bidders at any time prior to, and during the
life of the contract, including the Guarantee Period, that the Local Unit shall be immediately so notified by the
signatory of this Eligibility Affidavit.

The undersigned understands that the firm making the bid as a contractor is subject to debarment,
suspension and/or disqualification in contracting with the State of New Jersey and the Department of
Environmental Protection if the contractor, pursuant to N.J.A.C. 7:1-5.2, commits any of the acts listed
therein, and as determined according to applicable law and regulation.

Name and Address of Contractor

Name and Title of Affiant

Subscribed and Sworn
Before me this _____ day
Of _____, 20____

Notary Public: _____

My commission expires _____, 20____

Signed: _____

By: _____
Signature of Officer or Individual

If BIDDER is:

An Individual

By _____
(SEAL)

(Individual's Name)

Doing business as _____

Business Address: _____

Phone Number: _____

A Partnership

By _____
(SEAL)

(Firm Name)

(General Partner)

Business Address: _____

Phone Number: _____

A Corporation

By _____
(SEAL)

(Corporation Name)

(State of Incorporation)

By _____
(Name of Person Authorized to Sign)

(Title)

(Corporate Seal)

Attest _____
(Secretary)

Business Address: _____

Phone Number: _____

A Joint Venture

By _____
(Name)

(Address)

By _____
(Name)

(Address)

(Each joint venturer must sign. The manner of signing for each individual, partnership, and corporation that is party to the joint venture should be in the manner indicated above)

DEVIATIONS AND/OR EXCEPTIONS

All deviations or exceptions from the specifications must be clearly enumerated; otherwise, delivery shall be in conformance to the specified requirements.

Signed: _____

By: _____
Signature of Officer or Individual

Firm: _____

Address: _____

This proposal is accompanied by a bid security in accordance with the conditions stated in the Invitation to Bid.

The bid security in the form of _____
Certified Check
Cashier's Check is in
Bid Bond

the amount of _____ (\$_____)

Payable to _____

The undersigned hereby agrees that if this proposal shall be accepted by the Borough, and the undersigned shall fail to execute and deliver the contract and the required Performance Bond or other required documents in accordance with the requirements of this proposal and as stated under instructions to Bidders within the time specified, then the undersigned shall be deemed to have abandoned the contract and thereupon the proposal and acceptance shall be null and void and the security accompanying the proposal shall be forfeited to and retained by the Borough, as liquidated damages for such failure or neglect, and to indemnify the Borough for any loss which may be sustained by failure of the Bidder to execute the contract and furnish documents as aforesaid.

The undersigned is _____
An Individual
A Partnership under the laws of the State
A Corporation

Of _____ having principal offices at

Signature: _____

Date: _____

PROPOSAL FORM

BURROWES MANSION STRUCTURAL REPAIRS AND ELECTRICAL UPGRADES

TO: The Borough Manager
Of The Borough of Matawan

The undersigned, having read and understood the ADVERTISEMENT, INSTRUCTIONS TO BIDDERS, SPECIFICATION and all other papers included in this bid document shall comply with all the terms, covenants and agreements if awarded the contract.

Accompanying this proposal is a ten percent deposit in satisfactory form, as outlined in ADVERTISEMENT TO BIDDERS.

The undersigned is a _____ under the laws of the State of _____, having principal offices at:

Having carefully examined all of the Contract Documents, and having examined the site and being familiar with conditions affecting work, Undersigned proposes to furnish all of the materials and labor, and perform all of the work necessary to complete the work as described in the Contract Documents for the Stipulated Sum of:

BASE BID: (includes \$7,500 allowances, does not include alternates)

_____ dollars

Amount in words

\$

_____ dollars
Amount in numbers

ADD ALTERNATE NO. 1: All work related to the structural upgrades at the floor of Room 203, including, but not limited to: removal and re-plastering of ceiling at Room 102. New ceiling fixtures at Room 102 are included in the Base Bid.

_____ dollars \$ _____
Amount in words Amount in numbers

ADD ALTERNATE NO. 2: All work related to the installation of a new slab in Room 003. New footing and column at beam repair are included in the Base Bid.

_____ dollars \$ _____
Amount in words Amount in numbers

UNIT PRICES:

No. 1 - Plaster Patching: \$ _____/square foot

No. 2 - Wood Flooring Replacement: \$ _____/square foot

BID BREAKDOWN:

Provide informational Breakdown of Base Bid as follows:

Note: Bid breakdown is included for purposes of bid evaluation only, and is not part of Contract

Allowances	<u>\$ 7,500</u>
Selective Demolition	_____
Cutting and Patching	_____
Concrete	_____
Masonry Restoration	_____
Structural Steel	_____
Rough Carpentry	_____
Finish Carpentry	_____
Wood Flooring Restoration	_____
Plaster and Plaster Patching	_____
Interior Painting	_____
Rough Electrical	_____
Finish Electrical:	_____
Other:	_____
General Conditions	_____
Overhead & Profit	_____

TOTALS BASE BID _____

Name of Firm

Address

Signature

City, State, Zip Code

Print Name & Title

Telephone Number

Date

Structural Repairs & Electrical Upgrades
Burrowes Mansion
Matawan, NJ

CONTRACTOR QUALIFICATIONS FOR
BURROWS MANSION
STRUCTURAL REPAIRS AND ELECTRICAL UPGRADES
MATAWAN, NEW JERSEY

STATEMENT OF GENERAL NOTICE

Burrowes Mansions is located at 94 Main Street, Matawan, NJ 07747. The property is listed on the New Jersey and National Registers of Historic Places. All work done on this project must conform to the Secretary of the Interior's *Standards for Treatment of Historic Properties* and is subject to review by the New Jersey Historic Preservation Office.

The principal activities involved in this project are related to the Structural Repairs and Electrical Upgrades and include:

1. Excavate and provide vapor barrier new slab at the basement
2. Provide perimeter drainage below slab
3. Repoint interior basement walls
4. Provide new footings, steel columns and steel beams for first floor framing
5. Provide supplemental steel framing at floor of Room 203
6. Miscellaneous rough carpentry
7. Plaster cutting and patching
8. New electrical service
9. Remove existing wiring and provide new code compliant wiring throughout
10. Provide new lighting throughout
11. Provide select outdoor lighting
12. Provide emergency exit lighting and signage

The Architect for this work is HMR Architects, 821 Alexander Road, Suite 115, Princeton, New Jersey 08540, Tel. (609) 452-1070, Fax (609) 452-1074. For answers to site specific questions contact Kurt Leasure at HMR Architects. Email address: leasure@hmr-architects.com.

The Owner requires that prospective bidders submit a completed Qualifications Statement as set forth herein. Completed Contractor's Qualification Statements must be submitted in triplicate with bid. Failure to fully complete the Contractor's Qualifications Statement shall result in disqualification of the prospective bidder.

Owner and Architect will jointly review the Contractor's Qualifications Statements received from Bidders according to the Evaluation Criteria set forth herein. Bidders whose Qualifications Statements are determined to be acceptable will be identified as Qualified Bidders.

The Owner reserves the right to reject all or some of the Bidders if the Owner believes, in good faith, based upon the information submitted by the Bidder or investigation of the Bidder, that such Bidder is not properly qualified to carry out the obligations of the contract and to complete the Work within the specified time.

Structural Repairs & Electrical Upgrades
Burrowes Mansion
Matawan, NJ

EVALUATION CRITERIA

The following five (5) criteria will be used for evaluating the qualifications of Bidders. The evaluation will be based on information in the Qualification Statement provided by prospective Bidders as well as information supplied by the Bidders' references.

- (1) The Bidder, acting as General Contractor, will be required to demonstrate verifiable, successful experience in Project Supervision and Administration of Historic Preservation Projects. This experience shall include at least two (2) projects involving separate historic buildings or sites and **similar activities and scope of work as the subject project** completed in compliance with *the Secretary of the Interior's Standards for the Treatment of Historic Properties (1995)* within the past five (7) years preceding the date of the execution of this pre-qualification form. At least one of the projects must have been reviewed by the New Jersey Historic Trust, a State Historic Preservation Office or the qualified historic review body of a county or municipality. Each project must be at least \$ 250,000 construction cost.
- (2) The Bidder's proposed Project Supervisor will be required to demonstrate verifiable, successful experience in Project Supervision and Administration of Historic Preservation Projects. This experience shall include at least two (2) projects involving separate historic buildings or sites and **similar activities and scope of work as the subject project** completed in compliance with *the Secretary of the Interior's Standards for the Treatment of Historic Properties (1995)* within the past five (7) years preceding the date of the execution of this pre-qualification form. At least one of the projects must have been reviewed by the New Jersey Historic Trust, a State Historic Preservation Office or the qualified historic review body of a county or municipality. Each project must be at least \$ 150,000 construction cost.
- (3) The Bidder must have not wrongfully defaulted on a contract or had work terminated for non-performance within the past five (5) years.
- (4) The Bidder must have not been denied a consent of surety, a bid bond, or a performance bond within the past twelve (12) months, based on the bidder's inability to meet the surety's reasonable underwriting standards.
- (5) The Bidder must demonstrate satisfactory performance on all current projects in progress.

Structural Repairs & Electrical Upgrades
Burrowes Mansion
Matawan, NJ

BIDDER'S QUALIFICATION STATEMENT

This form must be completed and submitted by prospective Bidders who wish to be considered for this work. Failure to substantially complete the Bidder's Qualification Statement will result in disqualification of the prospective Bidder. Attachments to this sheet are acceptable (please properly label).

1. Name and address of Firm:

Phone #

Contact person:

Fax #

2. Under what other name (s) has your business operated?

3. Business form (corporation, partnership, etc.)

Date of formation:

Principal location:

Names of Officers of Corporation or Partners:

4. Has your firm or any predecessor firm defaulted on a contract or had work terminated for non-performance within the last five (5) years? If so, on a separate sheet describe the project, owner, date and circumstances/reasons.

5. Has your firm or any predecessor firm been denied a consent of surety, a bid bond, or a performance bond within the past twelve (12) months? If so, on a separate sheet describe the circumstances/reasons.

Structural Repairs & Electrical Upgrades
Burrowes Mansion
Matawan, NJ

6. GENERAL CONTRACTOR

Provide evidence of successful experience on at least two (2) projects involving separate historic buildings or sites **involving similar activities and scope of work as the subject work** completed in compliance with *the Secretary of the Interior's Standards for the Treatment of Historic Properties (1995)* within the past five (7) years preceding the date of the execution of this pre-qualification form. At least one of these projects must have been reviewed by the New Jersey Historic Trust, a State Historic Preservation Office or the qualified historic review body of a county or municipality. Each project must be at least \$250,000 construction cost.

Submit an overall color photo of each project listed below.

PROJECT #1

Project Name: _____ Location: _____
Historic Review By? _____
Completion Date: _____ Cost: _____
Project Supervisor: _____
Subcontractors: _____
Scope of Work and Nature of Project: _____

Owner: _____
Owner Contact Person: _____ Phone: _____
Architect: _____
Architect Contact Person: _____ Phone: _____

PROJECT #2

Project Name: _____ Location: _____
Historic Review By? _____
Completion Date: _____ Cost: _____
Project Supervisor: _____
Subcontractors: _____
Scope of Work and Nature of Project: _____

Owner: _____
Owner Contact Person: _____ Phone: _____
Architect: _____
Architect Contact Person: _____ Phone: _____

Structural Repairs & Electrical Upgrades
Burrowes Mansion
Matawan, NJ

7. **PROPOSED PROJECT SUPERVISOR:** _____

Provide evidence of successful experience on at least two (2) projects involving separate historic buildings or sites **involving similar activities and scope of work as the subject work** completed in compliance with *the Secretary of the Interior's Standards for the Treatment of Historic Properties (1995)* within the past five (7) years preceding the date of the execution of this pre-qualification form. At least one of these projects must have been reviewed by the New Jersey Historic Trust, a State Historic Preservation Office or the qualified historic review body of a county or municipality. Each project must be at least \$ 150,000 construction cost. The Project Supervisor is the full time, daily, on-site supervisor.

PROJECT #1

Project Name: _____ Location: _____

Historic Review By? _____

Completion Date: _____ Cost: _____

Contractor: _____

Scope of Work and Nature of Project: _____

Owner: _____

Owner Contact Person: _____ Phone: _____

Architect: _____

Architect Contact Person: _____ Phone: _____

PROJECT #2

Project Name: _____ Location: _____

Historic Review By? _____

Completion Date: _____ Cost: _____

Contractor: _____

Scope of Work and Nature of Project: _____

Owner: _____

Owner Contact Person: _____ Phone: _____

Architect: _____

Architect Contact Person: _____ Phone: _____

Structural Repairs & Electrical Upgrades
Burrowes Mansion
Matawan, NJ

8. **GENERAL CONTRACTOR**

PROVIDE THE FOLLOWING INFORMATION ON ALL CURRENT PROJECTS IN PROGRESS.
(Use additional sheets if necessary)

SUBMIT AN OVERALL COLOR PHOTO OF EACH PROJECT LISTED BELOW.

Project Name _____
Location _____
Owner _____ Phone _____
Architect _____ Phone _____
Architects Contact _____ Phone _____
Contract Amount _____
Scheduled Completion Date _____

Project Name _____
Location _____
Owner _____ Phone _____
Architect _____ Phone _____
Architects Contact _____ Phone _____
Contract Amount _____
Scheduled Completion Date _____

Project Name _____
Location _____
Owner _____ Phone _____
Architect _____ Phone _____
Architects Contact _____ Phone _____
Contract Amount _____
Scheduled Completion Date _____

Structural Repairs & Electrical Upgrades
Burrowes Mansion
Matawan, NJ

CERTIFICATION

I (we) the undersigned certify the truth and correctness of all statements and answers contained herein:

Date: _____

Name of Bidder: _____

Address of Bidder: _____

Telephone & Fax Numbers: _____

By (signature, no stamps) _____

(print / type name and title) _____

Witnessed: (if corporation, by the secretary of the corporation)

By: (sign, no stamps) _____

(print name and title) _____

Subscribed and sworn to before me
this _____ day of _____

Notary Public of the State of:

My commission expires:

END OF FORM



STATE OF NEW JERSEY
Department of Labor and Workforce Development
Division of Wage and Hour Compliance - Public Contracts Section
PO Box 389
Trenton, NJ 08625-0389

PREVAILING WAGE RATE DETERMINATION

The New Jersey Prevailing Wage Act (N.J.S.A. 34:11-56.25 et seq.) requires that the Department of Labor and Workforce Development establish and enforce a prevailing wage level for workers engaged in public works in order to safeguard their efficiency and general well being and to protect them as well as their employers from the effects of serious and unfair competition.

Prevailing wage rates are wage and fringe benefit rates based on the collective bargaining agreements established for a particular craft or trade in the locality in which the public work is performed. In New Jersey, these rates vary by county and by the type of work performed.

Applicable prevailing wage rates are those wages and fringe benefits in effect on the date the contract is awarded. All pre-determined rate increases listed at the time the contract is awarded must also be paid, beginning on the dates specified. Rates that have expired will remain in effect until new rates are posted.

Prevailing Wage Rate

The prevailing wage rate for each craft will list the effective date of the rate and the following information:

W = Wage Rate per Hour **B** = Fringe Benefit Rate per Hour* **T** = Total Rate per Hour

* Fringe benefits are an integral part of the prevailing wage rate. Employers not providing such benefits must pay the fringe benefit amount directly to the employee each payday. Employers providing benefits worth less than the fringe benefit amount must pay the balance directly to the employee each payday.

Unless otherwise stated in the Prevailing Wage Rate Determination, the fringe benefit rate for overtime hours remains at the straight time rate.

When the Overtime Notes in the Prevailing Wage Rate Determination state that the overtime rates are "inclusive of benefits," the benefit rate is increased by the same factor as the wage rate (i.e. multiplied by 1.5 for time and one-half, multiplied by 2 for double time, etc.).

Apprentice Rate Schedule

An "apprentice" is an individual who is registered with the United States Department of Labor - Office of Apprenticeship and enrolled in a certified apprenticeship program during the period in which they are working on the public works project.

The apprentice wage rate is a percentage of the journeyman wage rate, unless otherwise indicated. The apprentice benefit rate is the full journeyman benefit rate, unless otherwise indicated.

If there is no apprentice rate schedule listed, the individual must be paid at least the journeyman rate even if that individual is in a certified apprentice program for that trade.

If there is no ratio of apprentices to journeymen listed for a particular craft, then the ratio shall be one (1) apprentice to every four (4) journeymen.

Comments/Notes

For each craft listed there will be comments/notes that cover the definition of the regular workday, shift differentials, overtime, recognized holidays, and any other relevant information.

Public Works Contractor Registration

The Public Works Contractor Registration Act (N.J.S.A. 34:11-56.48, et seq.) requires that **all** contractors, subcontractors, or lower tier subcontractors who are working on or who bid on public works projects register with the Department of Labor and Workforce Development. Applications are available at www.nj.gov/labor (click on Wage & Hour and then go to Registration & Permits).

Pursuant to N.J.S.A. 34:11-56.51:

No contractor shall bid on any contract for public work as defined in section 2 of P.L.1963, c. 150 (C.34:11-56.26) unless the contractor is registered pursuant to this act. No contractor shall list a subcontractor in a bid proposal for the contract unless the subcontractor is registered pursuant to P.L.1999, c.238 (C.34:11-56.48 et seq.) at the time the bid is made. No contractor or subcontractor, including a subcontractor not listed in the bid proposal, shall engage in the performance of any public work subject to the contract, unless the contractor or subcontractor is registered pursuant to that act.

Snow Plowing

Snow plowing contracts are not subject to the New Jersey Prevailing Wage Act or the Public Works Contractor Registration Act.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - MONMOUTH

Craft: Air Conditioning & Refrigeration - Service and Repair

PREVAILING WAGE RATE

	03/01/22
Journeyman (Mechanic)	W42.98 B27.48 T70.46

Craft: Air Conditioning & Refrigeration - Service and Repair

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
As Shown	1st Year	2nd Year	3rd Year	4th Year	5th Year	Wage = %	of Jnymn	Wage		
Wage and Bene	40%	50%	60%	70%	80%	Bene = %	of Jnymn	Bene		

Ratio of Apprentices to Journeymen - 1:4

Craft: Air Conditioning & Refrigeration - Service and Repair

COMMENTS/NOTES

THESE RATES MAY BE USED FOR THE FOLLOWING:

- Service/Repair/Maintenance Work to EXISTING facilities.
- Replacement or Installation of air conditioning and refrigeration equipment when the combined tonnage does not exceed 15 tons for refrigeration, or 25 tons for air conditioning.
- Replacement or Installation of "packaged" or "unitary" rooftop-type units when the combined tonnage of the units does not exceed 75 tons.

NOTE: These rates may NOT be used for any work in new construction (including work on new additions).

The regular workday shall consist of 8 hours, starting between 6:00 AM and 10:00 AM, Monday through Friday.

SHIFT DIFFERENTIALS:

- The second and third shifts shall be paid an additional 15% of the hourly rate.
- All shifts must run for a minimum of 5 consecutive days.

OVERTIME:

Hours worked in excess of 8 per day or before or after the regular workday, that are not shift work, and all hours on Saturday shall be paid at time and one-half the hourly rate, inclusive of benefits. All hours on Sunday and holidays shall be paid at double the hourly rate, inclusive of benefits.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Veterans' Day, Thanksgiving Day, Christmas Day.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - MONMOUTH

Craft: Boilermaker PREVAILING WAGE RATE

	01/01/22
Foreman	W53.13 B46.00 T99.13
General Foreman	W55.13 B47.05 T102.18
Journeyman	W48.13 B44.29 T92.42

Craft: Boilermaker APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
	65%	70%	75%	80%	85%	90%	95%			
1000 Hours										
Benefit =	37.57	38.51	39.49	40.44	41.41	42.37	43.32			

Ratio of Apprentices to Journeymen - *

* 1 apprentice will be allowed for the first 5 journeymen, 1 apprentice for the next 10 journeymen and 1 apprentice for each succeeding 20 journeymen up to a maximum of 5 apprentices per contractor on any one job.

Craft: Boilermaker COMMENTS/NOTES

HIGH WORK: All apprentices working on the erection, repair, or dismantling of smoke stacks, standpipes, or water towers shall be paid the Journeyman rate.

The regular workday shall consist of 8 hours, between 8:00 AM and 4:30 PM.

SHIFT DIFFERENTIALS:

- The second shift shall work 7½ hours and receive 8 hours pay, at a rate equal to the regular hourly rate plus 10%.
- The third shift shall work 7 hours and receive 8 hours pay, at a rate equal to the regular hourly rate plus 20%.
- For "Municipal Water Works" projects only, the following shall apply: Two, four day, 10 hour shifts may be worked at straight time Monday through Thursday. The day shift shall work four days, at 10 hours, for 10 hours pay. The second shift shall work four days, at nine and a half hours, for 10 hours pay, plus 10% the hourly rate for new work and .25 cents on repair work. Friday may be used as a make-up day at straight time, due to weather conditions, holiday or any other circumstances beyond the employer's control.

OVERTIME:

- Hours in excess of 8 per day, Monday through Friday, and all hours on Saturdays shall be paid at time and one-half the hourly rate. All hours on Sundays and holidays (except Labor Day) shall be paid at double the hourly rate. All hours on Labor Day shall be paid at four times the hourly rate.
- If any other craft employed by the same contractor, or a subcontractor thereof, receives double time in lieu of time and one-half, then the Boilermaker shall receive double time in lieu of time and one-half.
- For "Municipal Water Works" projects only, the following shall apply: Four 10 hour days may be worked Monday through Thursday at straight time. Friday may be used as a make-up day for a day lost to inclement weather, holiday or other conditions beyond the control of the employer. Overtime shall be paid for any hours that exceed 10 hours per day or 40 hours per week.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - MONMOUTH

RECOGNIZED HOLIDAYS: New Year's Day, Washington's Birthday, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans' Day, Thanksgiving Day, Christmas Day. Sunday holidays observed the following Monday.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - MONMOUTH

Craft: Boilermaker - Minor Repairs

PREVAILING WAGE RATE

	01/01/22
Foreman	W35.19 B17.67 T52.86
General Foreman	W35.69 B17.67 T53.36
Mechanic	W33.69 B17.67 T51.36

Craft: Boilermaker - Minor Repairs

COMMENTS/NOTES

NOTE: These rates apply to MINOR REPAIR WORK ONLY (repair work in the field for which the contract amount does not exceed \$125,000.00), for boilers that do not produce electric or are not used in the heating of petroleum products.

OVERTIME:

Hours in excess of 8 per day, Monday through Friday, and all hours on Saturdays shall be paid at time and one-half the hourly rate. All hours on Sundays and holidays (except Labor Day) shall be paid at double the hourly rate. All hours on Labor Day shall be paid at four times the hourly rate.

RECOGNIZED HOLIDAYS: New Year's Day, Washington's Birthday, Good Friday, Memorial Day, July 4th, Labor Day, Presidential Election Day, Thanksgiving Day, day after Thanksgiving, Christmas Day. Saturday holidays observed the preceding Friday, Sunday holidays observed the following Monday.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - MONMOUTH

Craft: Bricklayer, Stone Mason

PREVAILING WAGE RATE

	05/25/22
Deputy Foreman	W49.30 B34.13 T83.43
Foreman	W52.30 B34.13 T86.43
Journeyman	W46.30 B34.13 T80.43

Craft: Bricklayer, Stone Mason

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
	40%	50%	55%	60%	65%	70%	75%	80%		
6 Months										
Benefits	4.00	5.00	5.50	6.00	22.37	23.86	25.34	26.82		

Ratio of Apprentices to Journeymen - 1:5

Craft: Bricklayer, Stone Mason

COMMENTS/NOTES

The regular workday shall consist of 8 hours, between 6:00 AM and 4:30 PM.

SHIFT DIFFERENTIALS:

- When a 2 shift schedule (including a day shift) is established, the first, or day shift, shall be established on an 8 hour basis. The second shift shall be established on an 8 hour basis, and receive the regular rate plus 10%, inclusive of benefits.
- When a three shift schedule is established, the first shift shall be established on an 8 hour basis, the second shift on a 7.5 hour basis, and the third shift on a 7 hour basis. The first shift shall receive the regular hourly rate, the second shift shall receive the regular rate plus 10%, inclusive of benefits, and the third shift shall receive the regular rate plus 15%, inclusive of benefits.
- When there is no day shift, and a second or third shift is established, it shall be established on an 8 hour basis. The second shift shall receive the regular rate plus 10%, inclusive of benefits, and the third shift shall receive the regular rate plus 15%, inclusive of benefits.
- When an irregular shift must be established, this shift shall receive the regular rate plus 10%, inclusive of benefits.

OVERTIME:

- The first 2 hours in excess of 8 per day, or before or after the regular workday that are not shift work, Monday through Friday, shall be paid at time and one-half the regular rate, inclusive of benefits. Any additional overtime shall be paid at double the regular rate, inclusive of benefits. The first 10 hours on Saturday shall be paid at time and one-half the regular rate, inclusive of benefits. Any additional overtime shall be paid at double the regular rate, inclusive of benefits. All hours on Sundays and holidays shall be paid at double the regular rate, inclusive of benefits.
- Saturday may be used as a make-up day for hours lost to inclement weather.
- When Bricklayers/Stone Masons work on Saturday with Laborers, and no other crafts are working on the project for the day, benefits may be paid at straight time. If other crafts are present, the applicable overtime rate for benefits shall be paid.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - MONMOUTH

RECOGNIZED HOLIDAYS: New Year's Day, President's Day, Memorial Day, July 4th, Labor Day, Veterans' Day, Thanksgiving Day, Christmas Day. Sunday holidays will be observed the following Monday.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - MONMOUTH

Craft: Carpenter PREVAILING WAGE RATE

	05/16/22
Foreman	W61.30 B36.10 T97.40
Journeyman	W53.30 B31.47 T84.77

Craft: Carpenter APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
Yearly	40%	55%	65%	80%	90%					
Benefit	58% of	Appren	tice	Wage	for all	intervals	+ \$0.55			

Ratio of Apprentices to Journeymen - 1:3

Craft: Carpenter COMMENTS/NOTES

FOREMAN REQUIREMENTS:

- When there are 2 or more Carpenters on a job, 1 shall be designated as a Foreman.
- When there are 21 or more Carpenters on a job, 2 shall be designated as Foremen.

The regular workday shall consist of 8 hours, starting between 6:00 AM and 9:00 AM.

SHIFT DIFFERENTIALS:

- When a 2 shift schedule (including a day shift) is established, the day shift shall be established on an 8 hour basis. The second shift shall be established on an 8 hour basis, and receive the regular rate plus 10%, inclusive of benefits.
- When a three shift schedule is established, the first shift shall be established on an 8 hour basis, the second shift on a 7.5 hour basis, and the third shift on a 7 hour basis. The first shift shall receive the regular hourly rate, the second shift shall receive the regular rate plus 10% and the third shift shall receive the regular rate plus 15%, inclusive of benefits.
- When there is no day shift, and a second or third shift is established, it shall be established on an 8 hour basis. The second shift shall receive the regular rate plus 10% and the third shift shall receive the regular rate plus 15%, inclusive of benefits.
- When an irregular shift must be established, this shift shall receive the regular rate plus 15%, inclusive of benefits.

OVERTIME:

- All hours in excess of 8 per day, or before or after an established shift that are not shift work, and all hours on Saturdays shall be paid at time and one-half the hourly rate, inclusive of benefits. All hours on Sundays and holidays shall be paid at double the hourly rate, inclusive of benefits.
- Four 10-hour days may be worked, Monday to Thursday, at straight time. Friday may be used as a make-up day for a day lost due to inclement weather. If Friday is not a make-up day, all hours on Friday shall be paid at time and one-half the hourly rate, inclusive of benefits.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Veterans' Day, Thanksgiving Day, Christmas Day. Sunday holidays observed the following Monday. Veterans' Day may be substituted for the day after Thanksgiving.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - MONMOUTH

Craft: Carpenter - Resilient Flooring

PREVAILING WAGE RATE

	06/06/22
Foreman	W61.30 B36.01 T97.31
Journeyman	W53.30 B31.38 T84.68

Craft: Carpenter - Resilient Flooring

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
Yearly	40%	55%	65%	80%	90%					
Benefit	58%	of	Appren	tice	Wage	for all	intervals	+ \$0.46		

Ratio of Apprentices to Journeymen - *

* 1 apprentice shall be allowed to every 2 journeymen or major fraction thereof. No more than 3 apprentices on any one job or project.

Craft: Carpenter - Resilient Flooring

COMMENTS/NOTES

FOREMAN REQUIREMENTS:

- On any job where there are 4 or more Carpenters of Resilient Flooring, 1 must be designated a Foreman.

FOR SYNTHETIC TURF INSTALLATION ONLY:

- The rate shall be 90% of the wage and benefit rate.

The regular workday consists of 8 hours, starting between 6:00 AM and 9:00 AM.

SHIFT DIFFERENTIALS:

- When a 2 shift schedule (including a day shift) is established, the day shift, shall be established on an 8 hour basis. The second shift shall be established on an 8 hour basis, and receive the regular wage rate plus 10%.
- When a three shift schedule is established, the first shift shall be established on an 8 hour basis, the second shift on a 7.5 hour basis, and the third shift on a 7 hour basis. The first shift shall receive the regular wage rate, the second shift shall receive the regular wage rate plus 10% and the third shift shall receive the regular wage rate plus 15%.
- When there is no day shift, and a second or third shift is established, it shall be established on an 8 hour basis. The second shift shall receive the regular wage rate plus 10% and the third shift shall receive the regular wage rate plus 15%.
- When an irregular shift must be established, this shift shall receive the regular rate plus 15%, inclusive of benefits.

OVERTIME:

- Hours in excess of 8 per day or 40 per week, or before or after the regular workday, Monday through Friday, shall be paid at time and one-half the wage rate. Saturday may be used as a make-up day, at straight time, up to 8 hours, for hours lost to reasons beyond the control of the employer, up to a total of 40 hours per week; hours in excess of 8 on Saturday shall then be paid at time and one-half the wage rate. If Saturday is not a make-up day, all hours on Saturday shall be paid at time and one-half the wage rate. All hours on Sundays and holidays shall be paid at double the wage rate.
- Four 10-hour days may be worked, Monday to Thursday, at straight time. Friday may be used as a make-up day for hours lost to reasons beyond the control of the employer. If Friday is not a make-up day, all hours on Friday shall be paid at time and one-half the wage rate.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - MONMOUTH

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Veterans' Day, Thanksgiving Day, Christmas Day. Sunday holidays will be observed the following Monday. Veterans' Day may be substituted for the day after Thanksgiving.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - MONMOUTH

Craft: Cement Mason

PREVAILING WAGE RATE

See "Bricklayer, Stone Mason" Rates

Craft: Cement Mason

COMMENTS/NOTES

See " Bricklayer, Stone Mason" Rates

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - MONMOUTH

Veterans' Day, Thanksgiving Day, Christmas Day.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - MONMOUTH

Craft: Dockbuilder PREVAILING WAGE RATE

	05/01/22
Foreman	W57.79 B50.47 T108.26
Foreman (Concrete Form Work)	W56.70 B37.11 T93.81
Journeyman	W50.25 B50.47 T100.72
Journeyman (Concrete Form Work)	W49.30 B37.11 T86.41

Craft: Dockbuilder APPRENTICE RATE SCHEDULE

<u>INTERVAL</u>	<u>PERIOD AND RATES</u>									
Yearly	20.10	25.13	32.66	40.20						
Benefit	33.18	for all	intervals							

Ratio of Apprentices to Journeymen - *

* When there are 4 or fewer Dockbuilders on a job, no more than 1 may be an apprentice. When there are 5 or more Dockbuilders, there may be 1 apprentice for every 5 Dockbuilders.

Craft: Dockbuilder COMMENTS/NOTES

APPRENTICE RATE SCHEDULE FOR CONCRETE FORM WORK ONLY:

INTERVAL	PERIOD AND RATES			
Yearly	19.72	24.65	32.05	39.44
Benefits	25.24 for all intervals			

CREOSOTE HANDLING:

When handling creosote products on land piledriving, floating marine construction, and construction of wharves, the worker shall receive an additional \$0.25 per hour.

HAZARDOUS WASTE WORK:

- Hazardous waste removal work on a state or federally designated hazardous waste site where Level A, B, or C personal protection is required: an additional 20% of the hourly rate, per hour.
- Hazardous waste removal work in Level D, or where personal protection is not required: an additional \$1.00 per hour.

CERTIFIED WELDER: When required on the job by the project owner, a Certified Welder shall receive an additional \$1.00 per hour.

FOREMAN REQUIREMENTS:

The first Dockbuilder on the job shall be designated a Foreman.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - MONMOUTH

SHIFT DIFFERENTIAL:

- When a 2 shift schedule (including a day shift) is established, the day shift shall be established on an 8 hour basis. The second shift shall be established on an 8 hour basis and receive an additional 113% of the wage rate.
- When a three shift schedule is established, all three shifts shall be established on an 8 hour basis, but the second and third shifts shall receive an additional 113% of the wage rate.
- Benefits on shift work shall be paid at the straight-time rate.

OVERTIME:

Hours in excess of 8 per day, Monday through Friday, and all hours on Saturdays shall be paid at time and one-half the hourly rate. All hours on Sundays and holidays shall be paid at double the hourly rate.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Veterans' Day, Presidential Election Day, Thanksgiving Day, Christmas Day. Veterans' Day may be switched with the day after Thanksgiving.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - MONMOUTH

Craft: Drywall Finisher

PREVAILING WAGE RATE

	06/16/22
Foreman	W46.36 B28.16 T74.52
General Foreman	W48.48 B28.16 T76.64
Journeyman	W42.16 B28.16 T70.32

Craft: Drywall Finisher

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
	40%	50%		60%	70%		80%	90%		
6 Months										
Benefits	Intervals	1 to 2 =	11.00	Intervals	3 to 4 =	13.77	Intervals	5 to 6 =	17.38	

Ratio of Apprentices to Journeymen - 1:4

Craft: Drywall Finisher

COMMENTS/NOTES

The regular workday shall consist of 8 hours between 7:00 AM and 5:30 PM.

SHIFT DIFFERENTIALS:

- The second shift shall receive an additional 10% of the hourly rate, per hour, and the third shift shall receive an additional 15% of the hourly rate, per hour.
- When 3 shifts are worked, the second shift shall receive 8 hours pay for 7.5 hours of work, and the third shift shall receive 8 hours pay for 7 hours of work.
- Shift work must run for a minimum of 5 consecutive workdays.

OVERTIME:

- Hours in excess of 8 per day, Monday through Friday, and all hours on Saturdays shall be paid at time and one-half the regular rate, inclusive of benefits. All hours on Sundays and holidays shall be paid at double the regular rate, inclusive of benefits.
- Saturday or Sunday may be used to make up a day lost to inclement weather, at straight time.

RECOGNIZED HOLIDAYS: New Year's Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans' Day, Thanksgiving Day, Christmas Day. Saturday holiday observed the preceding Friday. Sunday holiday observed the following Monday.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - MONMOUTH

Craft: Electrician

PREVAILING WAGE RATE

	05/30/22
* Racking (Solar) Ground Handler	W42.50 B32.08 T74.58
Assistant General Foreman	W63.74 B48.14 T111.88
Foreman (3 to 4 Journeymen)	W59.49 B44.93 T104.42
Foreman (5 to 10 Journeymen)	W61.09 B46.12 T107.21
General Foreman (2 or more Foremen)	W69.06 B52.14 T121.20
Journeyman, Cable Splicer	W53.12 B40.11 T93.23
Lead Foreman (11 + Journeymen)	W62.68 B47.33 T110.01
Plan Reader	W57.37 B43.32 T100.69

Craft: Electrician

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
	25%	30%		Yearly	40%	50%	60%	80%		
6 months										
Benefit =	9.80	11.75			15.67	19.59	23.51	31.34		

Ratio of Apprentices to Journeymen - 2:3

Craft: Electrician

COMMENTS/NOTES

APPRENTICE RATE SCHEDULE AS OF 5-30-22:

INTERVAL	PERIOD AND RATES						
6 Months	25%	30%	Yearly	40%	50%	60%	80%
Benefits	10.03	12.03		16.04	20.06	24.07	32.08

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - MONMOUTH

* Please note that the Racking (Solar) Ground Handler work classification can only be used for the installation of the solar support system (the racking system) and shall not include any other aspect of the solar system installation, such as the panels, wiring, conduit, etc. In addition, with respect to all other aspects of a SOLAR project, only the following work classifications, as noted above (General Foreman, Assistant General Foreman, Lead Foreman and Journeyman), may be used, including the following Foreman classifications, Foreman (16+ Journeymen) and Solar Lead Foreman, paid at the following rates:

Foreman (16+ Journeyman):

As of 5-31-21- wage \$59.68, benefit \$45.06, Total \$104.74.

As of 5-30-22- wage \$61.09, benefit \$46.12, Total \$107.21.

Solar Lead Foreman:

As of 5-31-21- wage \$60.72, benefit \$45.84, Total \$106.56.

As of 5-30-22- wage \$62.15, benefit \$46.93, Total \$109.08.

THESE RATES ALSO APPLY TO THE FOLLOWING:

- All burglar and fire alarm work.
- All fiber optic work.
- Teledata work in new construction (including additions).
- Teledata work involving 16 instruments or more.

FOREMAN REQUIREMENTS (Foreman counts do not include apprentices):

- 3 to 4 workers- 1 must be a Foreman (3 to 4 JW).
- 5 to 11 workers- 1 must be a Foreman (5 to 10 JW).
- 12 to 22 workers- 1 must be a Lead Foreman and 1 must be a Foreman (5 to 10 JW).
- 23 workers- 1 must be a Lead Foreman and 2 must be a Foreman (5 to 10 JW).
- 24 to 34 workers- 1 must be a General Foreman and 3 must be a Foreman (5 to 10 JW).
- 35 to 36 workers- 1 must be a General Foreman, 1 must be an Assistant General Foreman and 4 must be a Foreman (5 to 10 JW).
- For each additional 40 workers- 1 additional Assistant General Foreman shall be added.

- The regular workday shall be 8 hours, between the hours of 7:00 am and 4:30 pm.

HEIGHT WORK:

- Work performed 50 feet above ground or floor - additional \$2.00 per hour.
- Work on radio and transmission towers, and smoke stacks: +25% of the Total Rate.

SHIFT DIFFERENTIALS:

- Shift work must run for a minimum of 5 consecutive workdays.
- 2nd Shift (4:30 PM to 12:30 AM): 8 hrs. pay for 7.5 hrs. work + an additional 10% of the regular rate, per hour, inclusive of benefits.
- 3rd Shift (12:30 AM to 8:00 AM): 8 hrs. pay for 7 hrs. work + an additional 15% of the regular rate, per hour, inclusive of benefits.

OVERTIME:

Hours in excess of 8 per day, or before or after the regular workday, Monday through Friday, and all hours on Saturday shall be paid at time and one-half the regular rate, inclusive of benefits. All hours on Sunday and holidays shall be paid at double the regular rate, inclusive of benefits.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans' Day, Thanksgiving Day, Christmas Day. Sunday holidays will be observed the following Monday.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - MONMOUTH

Craft: Electrician - Teledata (15 Instruments and Less)

PREVAILING WAGE RATE

	12/03/21	11/28/22	12/04/23	12/02/24
Journeyman Technician (1-2 workers on job)	W49.48 B21.28 T70.76	W50.99 B21.92 T72.91	W52.35 B22.51 T74.86	W53.61 B23.05 T76.66
Master Tech./Gen. Foreman (26+ workers on job)	W64.32 B27.67 T91.99	W66.28 B28.50 T94.78	W68.05 B29.27 T97.32	W69.69 B29.97 T99.66
Senior Tech./Asst. Gen. Foreman (16-25 workers on job)	W61.85 B26.60 T88.45	W63.74 B27.40 T91.14	W65.44 B28.14 T93.58	W67.01 B28.82 T95.83
Technician A/Foreman (9-15 workers on job)	W56.90 B24.47 T81.37	W58.64 B25.21 T83.85	W60.20 B25.89 T86.09	W61.65 B26.51 T88.16
Technician B/Foreman (4-8 workers on job)	W54.43 B23.41 T77.84	W56.08 B24.12 T80.20	W57.58 B24.77 T82.35	W58.97 B25.36 T84.33
Technician C/Foreman (3 workers on job)	W51.46 B22.13 T73.59	W53.03 B22.80 T75.83	W54.44 B23.41 T77.85	W55.75 B23.98 T79.73

Craft: Electrician - Teledata (15 Instruments and Less)

APPRENTICE RATE SCHEDULE

<u>INTERVAL</u>	<u>PERIOD AND RATES</u>									
* 6 Months	35%	35%	40%	43%	48%	54%	61%	67%	74%	81%
Benefit	7.45	7.45	8.51	9.15	10.21	11.49	12.98	14.26	15.74	17.24

Ratio of Apprentices to Journeymen - 2:3

Craft: Electrician - Teledata (15 Instruments and Less)

COMMENTS/NOTES

APPRENTICE RATE SCHEDULE AS OF 11-28-22

INTERVAL	PERIOD AND RATES									
6 Months	35%	35%	40%	43%	48%	54%	61%	67%	74%	81%
Benefit	7.67	7.67	8.76	9.42	10.52	11.84	13.38	14.69	16.22	17.76

APPRENTICE RATE SCHEDULE AS OF 12-4-23

INTERVAL	PERIOD AND RATES									
6 Months	35%	35%	40%	43%	48%	54%	61%	67%	74%	81%
Benefit	7.88	7.88	9.00	9.68	10.80	12.15	13.73	15.09	16.66	18.24

APPRENTICE RATE SCHEDULE AS OF 12-4-24

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - MONMOUTH

INTERVAL	PERIOD AND RATES									
6 Months	35%	35%	40%	43%	48%	54%	61%	67%	74%	81%
Benefit	8.07	8.07	9.22	9.91	11.07	12.45	14.06	15.44	17.06	18.67

* The apprentice wage rate is paid at the percentage of the Journeyman Technician wage rate .

NOTES:

- 1) These rates are for service, maintenance, moves and/or changes affecting 15 instruments or less. These rates may NOT be used for any new construction or any fiber optic work.
- 2) The number of workers on the jobsite is the determining factor for which Foreman category applies.

HEIGHT WORK (work performed 50 feet above ground/floor): +\$2.00 per hr.

The regular workday consists of 8 hours between 7:00 AM and 5:30 PM.

SHIFT DIFFERENTIALS:

- Shift work must run for a minimum of 5 consecutive workdays.
- 2nd Shift (4:30 PM to 12:30 AM): 8 hrs. pay for 7.5 hrs. work + an additional 10% of the regular rate, per hour, inclusive of benefits
- 3rd Shift (12:30 AM to 8:00 AM): 8 hrs. pay for 7 hrs. work + an additional 15% of the regular rate, per hour, inclusive of benefits

OVERTIME:

- Hours in excess of 8 per day, or before or after the regular workday, Monday through Friday, that are not shift work, and the first 10 hours on Saturday shall be paid at time and one-half the regular rate, inclusive of benefits. Hours in excess of 10 on Saturday and all hours on Sunday and holidays shall be paid at double the regular rate, inclusive of benefits.
- Four 10-hour days may be worked Monday thru Friday, between the hours of 7:00 AM and 5:30 PM. A make-up day may be used for the day not being worked during the four 10-hour day schedule if a holiday occurs during the week or for any other conditions that prevent an employee from working the four 10-hour day schedule.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans Day, Thanksgiving Day, Christmas Day. Sunday holidays will be observed the following Monday. Saturday holidays will be observed the preceding Friday.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - MONMOUTH

Craft: Electrician - Teledata (16 Instruments & More)

PREVAILING WAGE RATE

See "Electrician" Rates

Craft: Electrician - Teledata (16 Instruments & More)

COMMENTS/NOTES

See ELECTRICIAN Rates

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - MONMOUTH

Craft: Electrician- Outside Commercial

PREVAILING WAGE RATE

	05/30/22
Assistant General Foreman	W64.02 B47.86 T111.88
Cable Splicer	W53.35 B39.88 T93.23
Equipment Operator	W53.35 B39.88 T93.23
Foreman (3-4 Journeymen)	W59.75 B44.67 T104.42
Foreman- (5-10 Journeymen)	W61.35 B45.86 T107.21
General Foreman	W69.36 B51.84 T121.20
Groundman	W37.35 B27.91 T65.26
Journeyman Lineman	W53.35 B39.88 T93.23
Lead Foreman- (11+ Journeymen)	W62.95 B47.06 T110.01
Plan Reader	W57.62 B43.07 T100.69

Craft: Electrician- Outside Commercial

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
1000 Hours	60%	65%	70%	75%	80%	85%	90%			
Benefits	23.38	25.32	27.28	29.22	31.16	33.12	35.06			

Craft: Electrician- Outside Commercial

COMMENTS/NOTES

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - MONMOUTH

APPRENTICE RATE SCHEDULE AS OF 5-30-22:

INTERVAL	PERIOD AND RATES						
1000 Hours	60%	65%	70%	75%	80%	85%	90%
Benefits	23.93	25.92	27.92	29.91	31.90	33.90	35.89

* FOR UTILITY WORK PLEASE SEE STATEWIDE RATES

HEIGHT WORK:

- Work performed 50 feet above ground or floor- additional \$2.00 per hour.
- Work on radio and transmission towers, and smoke stacks: +25% of the Total Rate.

FOREMAN REQUIREMENTS (Foreman counts do not include apprentices):

- 3 to 4 workers- 1 must be a Foreman (3 to 4 JL).
- 5 to 11 workers- 1 must be a Foreman (5 to 10 JL).
- 12 to 22 workers- 1 must be a Lead Foreman and 1 must be a Foreman (5 to 10 JL).
- 23 workers- 1 must be a Lead Foreman and 2 must be a Foreman (5 to 10 JL).
- 24 to 34 workers- 1 must be a General Foreman and 3 must be a Foreman (5 to 10 JL).
- 35 to 36 workers- 1 must be a General Foreman, 1 must be an Assistant General Foreman and 4 must be a Foreman (5 to 10 JL).
- For each additional 40 workers- 1 additional Assistant General Foreman shall be added.

SHIFT DIFFERENTIALS:

- 2nd Shift (4:30 PM to 12:30 AM): 8 hrs. pay for 7.5 hrs. work + an additional 10% of the regular rate, inclusive of benefits.
- 3rd Shift (12:30 AM to 8:00 AM): 8 hrs. pay for 7 hrs. work + an additional 15% of the regular rate per hour, inclusive benefits.

OVERTIME:

Hours in excess of 8 per day, Monday through Friday, and all hours on Saturdays shall be paid at time and one-half the regular rate, inclusive of benefits. All hours on Sundays and holidays shall be paid at double the regular rate, inclusive of benefits.

RECOGNIZED HOLIDAYS:

New Year's Day, Presidents Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans' Day, Thanksgiving Day and Christmas Day. Sunday holidays will be observed the following Monday.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - MONMOUTH

Craft: Electrician-Utility Work (North)

PREVAILING WAGE RATE

Rates are located in the "Statewide" rate package

Craft: Electrician-Utility Work (North)

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
* 6 Months	60%	65%	70%	75%	80%	85%	90%			
Benefits	69% of	Appren	tice	Wage	Rate	for all	intervals			

Craft: Electrician-Utility Work (North)

COMMENTS/NOTES

Electrician-Utility Work (North) rates are located in the "Statewide" rate package.

* The apprentice wage rate is paid at the percentage of the Journeyman Lineman wage rate located in the "Statewide" rate package.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - MONMOUTH

Craft: Electrician-Utility Work (South)

PREVAILING WAGE RATE

Rates are located in the "Statewide" rate package

Craft: Electrician-Utility Work (South)

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
6 Months	30.60	33.15	35.70	38.25	40.80	43.35	45.90			
Benefits	26.90	28.42	29.93	31.47	32.98	34.52	36.01			

Craft: Electrician-Utility Work (South)

COMMENTS/NOTES

Electrician-Utility Work (South) rates are located in the "Statewide" rate package.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - MONMOUTH

Craft: Elevator Constructor

PREVAILING WAGE RATE

	01/01/22
Helper-Over 5 Years	W44.46 B41.03 T85.49
Helper-Under 5 Years	W44.46 B40.14 T84.60
Mechanic (Journeyman) over 5 years	W63.52 B42.56 T106.08
Mechanic (Journeyman) under 5 years	W63.52 B41.29 T104.81
Mechanic in Charge (Foreman) over 5 years	W71.46 B43.19 T114.65
Mechanic in Charge (Foreman) under 5 years	W71.46 B41.76 T113.22
Probationary Helper (1st 6 months)	W31.76 B39.38 T71.14

Craft: Elevator Constructor

APPRENTICE RATE SCHEDULE

<u>INTERVAL</u>	<u>PERIOD AND RATES</u>									
Yearly	55%	65%	70%	80%						
Benefits	full	journeyma	benefit	rate for	all	intervals				

Ratio of Apprentices to Journeymen - *

* Total number of helpers and apprentices shall not exceed the number of mechanics on the job except where 2 teams are working, 1 additional helper or apprentice may be employed for first 2 teams and an extra helper or apprentice for each additional 3 teams. Further, the employer may use as many helpers or apprentices as needed under the direction of a mechanic in wrecking old plants, handling and hoisting material, and on foundation work. When replacing cables on existing elevators, employer may use 2 helpers or apprentices to 1 mechanic.

Craft: Elevator Constructor

COMMENTS/NOTES

SHIFT DIFFERENTIALS:

- 2nd Shift (4:30 PM to 12:30 AM) shall be established on the basis of 7.5 hours of work for 8 hours of pay, plus an additional 10% per hour.
- 3rd Shift (12:30 AM to 8:00 AM) shall be established on the basis of 7 hours of work for 8 hours of pay, plus an additional 15% per hour.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - MONMOUTH

OVERTIME:

- Hours in excess of 8 per day, Monday through Friday, and all hours on Saturdays, Sundays, and holidays shall be paid at double the hourly rate.
- Four 10-hour days may be worked, Monday to Thursday or Tuesday to Friday, at straight time. When working a 4-10 hour day schedule, all hours worked on a day other than the days established for the 4-10 hour schedule shall be paid at double the hourly rate.

RECOGNIZED HOLIDAYS: New Year's Day, Memorial Day, July 4th, Labor Day, Veterans' Day, Thanksgiving Day and day after, Christmas Day. Saturday holidays observed the preceding Friday, Sunday holidays observed the following Monday.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - MONMOUTH

Craft: Glazier PREVAILING WAGE RATE

	05/18/22
* Leadman	W51.48 B29.13 T80.61
Foreman	W53.48 B29.37 T82.85
General Foreman	W55.48 B29.61 T85.09
Journeyman	W49.48 B28.89 T78.37

Craft: Glazier APPRENTICE RATE SCHEDULE

<u>INTERVAL</u>	<u>PERIOD AND RATES</u>									
	50%	55%	60%	65%	70%	75%	80%	90%		
6 Months										
Benefits	9.75	9.75	12.36	12.36	15.60	15.60	17.02	17.02		

Ratio of Apprentices to Journeymen - 1:4

Craft: Glazier COMMENTS/NOTES

Hazard/Height Pay: +\$1.00 per hour

* When there are three (3) men working on a jobsite for three (3) days or longer, 1 Journeyman may be designated as a Leadman for the duration of the job, provided he has his OSHA certification.

FOREMAN REQUIREMENTS:

- When there are 4 or more Glaziers on a job, 1 must be designated a Foreman.
- When there are 15 or more Glaziers on a job, 1 must be designated a General Foreman.

The regular workday shall consist of 8 hours, between 7:00 AM and 5:30 PM, Monday to Friday.

SHIFT DIFFERENTIALS:

- The second shift shall receive an additional 10% of the hourly rate, per hour, and the third shift shall receive an additional 15% of the hourly rate, per hour.
- When 3 shifts are worked, the second shift shall receive 8 hours pay for 7.5 hours of work, and the third shift shall receive 8 hours pay for 7 hours of work.

OVERTIME:

Hours in excess of 8 per day, or before or after the regular workday Monday through Friday, and all hours on Saturdays shall be paid at time and one-half the regular rate. All hours on Sundays and holidays shall be paid at double the regular

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - MONMOUTH

rate.

RECOGNIZED HOLIDAYS: New Year's Day, Memorial Day, July 4th, Labor Day, General Election Day, Veterans' Day, Thanksgiving Day, Christmas Day. Saturday holiday observed the preceding Friday. Sunday holiday observed the following Monday.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - MONMOUTH

Craft: Heat & Frost Insulator

PREVAILING WAGE RATE

	09/28/21
Foreman	W59.97 B34.97 T94.94
General Foreman	W62.31 B36.08 T98.39
Journeyman	W57.69 B34.41 T92.10

Craft: Heat & Frost Insulator

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
Yearly	27.00	32.04	38.60	45.11						
Benefits	20.24	23.98	26.54	29.01						

Ratio of Apprentices to Journeymen - 1:3

Craft: Heat & Frost Insulator

COMMENTS/NOTES

NOTE: These rates apply to the installing of insulation on hot and cold mechanical systems.

The regular workday shall be 8 hours between 7:00 AM and 3:30 PM. In addition, the regular workday may also be 8 hours between 6:00 AM and 2:30 PM.

SHIFT DIFFERENTIAL:

- Shift work must run for a minimum of 5 consecutive workdays.
- Second Shift shall work 7.5 hours and receive 8 hours pay, at the regular rate, plus 25% per hour.
- Third Shift shall work 7 hours and receive 8 hours pay, at the regular rate, plus 30% per hour.

OVERTIME:

The first 2 hours in excess of 8 per day, hours outside of the regular workday Monday through Friday that are not shift work, and the first 10 hours on Saturday, shall be paid at time and one-half the regular rate, inclusive of benefits. All hours in excess of 10 per day, and all hours on Sunday and holidays (except Labor Day) shall be paid at double the regular rate, inclusive of benefits. All hours on Labor Day shall be paid at triple the regular rate, inclusive of benefits.

RECOGNIZED HOLIDAYS: New Year's Day, President's Day, Memorial Day, July 4th, Labor Day, Veterans' Day, Presidential Election Day, Thanksgiving Day and Christmas Day. Sunday holidays observed the following Monday.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - MONMOUTH

Craft: Heat & Frost Insulator - Asbestos Worker

PREVAILING WAGE RATE

	09/28/21
Asbestos Helper	W36.89
Abatement	B24.97
	T61.86

Craft: Heat & Frost Insulator - Asbestos Worker

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
	SEE	HEAT &	FROST	INSULAT OR						

Ratio of Apprentices to Journeymen - 1:3

Craft: Heat & Frost Insulator - Asbestos Worker

COMMENTS/NOTES

NOTE: These rates apply only to the removal of insulation materials/asbestos from mechanical systems, including containment erection and demolition, and placing material in appropriate containers.

The regular workday shall be 8 hours between 7:00 AM and 3:30 PM. In addition, the regular workday may also be 8 hours between 6:00 AM and 2:30 PM.

SHIFT DIFFERENTIALS:

- Shift work must run for a minimum of 5 consecutive workdays.
- The second shift shall work 7.5 hours and receive 8 hours pay at the regular rate, plus 25% per hour.
- The third shift shall work 7 hours and receive 8 hours pay at the regular rate, plus 30% per hour.

OVERTIME: The first 2 hours in excess of 8 per day, hours outside of the regular workday Monday through Friday that are not shift work, and the first 10 hours on Saturday, shall be paid at time and one-half the regular rate, inclusive of benefits. All hours in excess of 10 per day, and all hours on Sunday and holidays (except Labor Day) shall be paid at double the regular rate, inclusive of benefits. All hours on Labor Day shall be paid at triple the regular rate, inclusive of benefits.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Veterans' Day, Presidential Election Day, Thanksgiving Day and Christmas Day. Sunday holidays observed the following Monday.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - MONMOUTH

Craft: Industrial Painter- Bridges

PREVAILING WAGE RATE

	06/08/22	02/01/23	02/01/24	02/01/25	02/01/26
Foreman	W62.23 B33.77 T96.00	W0.00 B0.00 T98.20	W0.00 B0.00 T100.20	W0.00 B0.00 T102.20	W0.00 B0.00 T104.20
General Foreman	W64.73 B33.77 T98.50	W0.00 B0.00 T100.70	W0.00 B0.00 T102.70	W0.00 B0.00 T104.70	W0.00 B0.00 T106.70
Journeyman	W57.23 B33.77 T91.00	W0.00 B0.00 T93.20	W0.00 B0.00 T95.20	W0.00 B0.00 T97.20	W0.00 B0.00 T99.20

Craft: Industrial Painter- Bridges

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
	6 Months	50%	70%	90%						
Benefits	13.05	19.66	26.28							

Ratio of Apprentices to Journeymen - 1:3

Craft: Industrial Painter- Bridges

COMMENTS/NOTES

* Industrial Painters perform work on all industrial structures, such as bridges, water tanks, waste water facilities, refineries, any structural steel work, etc.

These rates apply to: All bridges that span waterways, roadways, railways and canyons. All tunnels, overpasses, viaducts and all appurtenances.

FOREMEN REQUIREMENTS:

- When there are 4 or more Painters on a job, 1 shall be designated a Foreman.
- When there are 15 or more Painters on a job, 1 shall be designated a General Foreman.

The regular workday shall consist of 8 hours between 7:00 AM and 5:30 PM.

SHIFT DIFFERENTIALS:

- The second shift shall receive an additional 10% of the hourly rate, per hour, and the third shift shall receive an additional 15% of the hourly rate, per hour.

OVERTIME:

- Hours in excess of 8 per day, Monday through Friday, and all hours on Saturdays and Sundays shall be paid at time and one-half the regular rate. All hours on holidays shall be paid at double the regular rate, except Veterans Day, which shall be paid at time and one-half the regular rate.
- During a regular work week schedule, Saturday may be used as a make-up day lost to inclement weather, paid at the regular rate.
- Four 10-hour days may be worked, at the regular rate, Monday through Thursday. When the four 10-hour day schedule is used, the 11th and 12th hours shall be paid at time and one-half the regular rate. After the 12th hour, a worker shall be

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - MONMOUTH

paid at double the regular rate. Friday may be used as a make-up day lost to inclement weather, paid at the regular rate.

RECOGNIZED HOLIDAYS: New Year's Day, President's Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans Day, Thanksgiving Day, Christmas Day. Saturday holiday observed the preceding Friday. Sunday holiday observed the following Monday.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - MONMOUTH

Craft: Industrial Painter- Structural Steel

PREVAILING WAGE RATE

	06/08/22	02/01/23	02/01/24	02/01/25	02/01/26
Foreman	W50.97	W0.00	W0.00	W0.00	W0.00
	B31.42	B0.00	B0.00	B0.00	B0.00
	T82.39	T84.59	T86.59	T88.59	T90.59
General Foreman	W53.47	W0.00	W0.00	W0.00	W0.00
	B31.42	B0.00	B0.00	B0.00	B0.00
	T84.89	T87.09	T89.09	T91.09	T93.09
Journeyman	W45.97	W0.00	W0.00	W0.00	W0.00
	B31.42	B0.00	B0.00	B0.00	B0.00
	T77.39	T79.59	T81.59	T83.59	T85.59

Craft: Industrial Painter- Structural Steel

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
	SEE	INDUST	RIAL	PAINTER	BRIDGES					

Ratio of Apprentices to Journeymen - 1:3

Craft: Industrial Painter- Structural Steel

COMMENTS/NOTES

* Industrial Painters perform work on all industrial structures, such as bridges, water tanks, waste water facilities, refineries, any structural steel work, etc.

These rates apply to: All work in power plants (any aspect). On steeples, on dams, on hangers, transformers, substations, on all open steel, in refineries, tank farms, water/sewerage treatment facilities and on pipelines.

FOREMEN REQUIREMENTS:

- When there are 4 or more Painters on a job, 1 shall be designated a Foreman.
- When there are 15 or more Painters on a job, 1 shall be designated a General Foreman.

The regular workday shall consist of 8 hours between 7:00 AM and 5:30 PM.

SHIFT DIFFERENTIALS:

- The second shift shall receive an additional 10% of the hourly rate, per hour, and the third shift shall receive an additional 15% of the hourly rate, per hour.

OVERTIME:

- Hours in excess of 8 per day, Monday through Friday, and all hours on Saturdays and Sundays shall be paid at time and one-half the regular rate. All hours on holidays shall be paid at double the regular rate, except for Veterans Day, which shall be paid at time and one-half the regular rate.
- During the regular work week schedule, Saturday may be used to make-up a day lost to inclement weather, paid at the regular rate.
- Four 10-hour days may be worked, at the regular rate, Monday through Thursday. When the four 10-hour day schedule is used, the 11th and 12th hours shall be paid at time and one-half the regular rate. After the 12th hour, a worker shall be paid at double the regular rate. Friday may be used as a make-up day lost to inclement weather, paid at the regular rate.

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PREVAILING WAGE RATE DETERMINATION**

County - MONMOUTH

RECOGNIZED HOLIDAYS: New Year's Day, President's Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans Day, Thanksgiving Day, Christmas Day. Saturday holiday observed the preceding Friday. Sunday holiday observed the following Monday.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - MONMOUTH

Craft: Industrial Painter- Water Tanks

PREVAILING WAGE RATE

	06/08/22	02/01/23	02/01/24	02/01/25	02/01/26
Foreman	W52.02	W0.00	W0.00	W0.00	W0.00
	B31.07	B0.00	B0.00	B0.00	B0.00
	T83.09	T85.29	T87.29	T89.29	T91.29
General Foreman	W54.52	W0.00	W0.00	W0.00	W0.00
	B31.07	B0.00	B0.00	B0.00	B0.00
	T85.59	T87.79	T89.79	T91.79	T93.79
Journeyman	W47.02	W0.00	W0.00	W0.00	W0.00
	B31.07	B0.00	B0.00	B0.00	B0.00
	T78.09	T80.29	T82.29	T84.29	T86.29

Craft: Industrial Painter- Water Tanks

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
	6 Months	50%	70%	90%						
Benefits	13.05	19.66	26.28							

Ratio of Apprentices to Journeymen - 1:3

Craft: Industrial Painter- Water Tanks

COMMENTS/NOTES

* Industrial Painters perform work on all industrial structures, such as bridges, water tanks, waste water facilities, refineries, any structural steel work, etc.

These rates apply to: All new and repaint water tanks (interior and exterior).

FOREMEN REQUIREMENTS:

- When there are 4 or more Painters on a job, 1 shall be designated a Foreman.
- When there are 15 or more Painters on a job, 1 shall be designated a General Foreman.

The regular workday shall consist of 8 hours between 7:00 AM and 5:30 PM.

SHIFT DIFFERENTIALS:

- The second shift shall receive an additional 10% of the hourly rate, per hour, and the third shift shall receive an additional 15% of the hourly rate, per hour.

OVERTIME:

- Hours in excess of 8 per day, Monday through Friday, and all hours on Saturdays and Sundays shall be paid at time and one-half the regular rate. All hours on holidays shall be paid at double the regular rate, except Veterans Day, which shall be paid at time and one-half the regular rate.
- During a regular work week schedule, Saturday may be used to make-up a day lost to inclement weather, paid at the regular rate.
- Four 10-hour days may be worked, at the regular rate, Monday through Thursday. When the four 10-hour day schedule is used, the 11th and 12th hours shall be paid at time and one-half the regular rate. After the 12th hour, a worker shall be paid at double the regular rate. Friday may be used as a make-up day lost to inclement weather, paid at the regular rate.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - MONMOUTH

RECOGNIZED HOLIDAYS: New Year's Day, President's Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans Day, Thanksgiving Day, Christmas Day. Saturday holiday observed the preceding Friday. Sunday holiday observed the following Monday.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - MONMOUTH

Craft: Ironworker PREVAILING WAGE RATE

	07/01/22
Rod /Fence Foreman	W48.39 B48.92 T97.31
Rod/Fence Journeyman	W45.39 B48.92 T94.31
Structural Foreman	W50.69 B48.92 T99.61
Structural Journeyman	W47.69 B48.92 T96.61

Craft: Ironworker APPRENTICE RATE SCHEDULE

<u>INTERVAL</u>	<u>PERIOD AND RATES</u>									
6 Months	50%	60%		Yearly	70%	80%	90%			

Ratio of Apprentices to Journeymen - 1:4

Craft: Ironworker COMMENTS/NOTES

HAZARDOUS WASTE WORK: On hazardous waste removal work on a state or federally designated hazardous waste site where the Ironworker is required to wear Level A,B, or C personal protection: + \$3.00 per hour

The regular workday consists of 8 hours between 6:00 AM and 4:30 PM.

FOREMAN REQUIREMENTS:

When there are 2 or more Ironworkers on a job, 1 shall be designated a Foreman.

SHIFT DIFFERENTIALS:

- When a 2 shift schedule is established, the first, or day shift , shall be established on an 8 hour basis .The second shift shall be established on an 8 hour basis, and receive the regular rate plus 15%.
- When a three shift schedule is established, the first shift shall be established on an 8 hour basis, the second shift on a 7.5 hour basis, and the third shift on a 7 hour basis. The first shift shall receive the regular hourly rate, the second shift shall receive the regular rate plus 15%, and the third shift shall receive the regular rate plus 20%.
- When there is no day shift, and a second or third shift is established, it shall be established on an 8 hour basis.
- When an irregular shift is established for the Ironworker (Structural) classification, the rate shall be paid at time and one-half the regular rate, inclusive of benefits. When an irregular shift is established for the Rod/Fence classification, the shift shall be established on an 8 hour basis and receive the regular rate, plus 20%.

OVERTIME:

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County - MONMOUTH

- All hours in excess of 8 per day, or before or after an established shift that are not shift work, and all hours on Saturday, shall be paid at time and one-half the regular rate, inclusive of benefits. All hours on Sunday and holidays shall be paid at double the hourly rate, inclusive of benefits. Saturday may be used as a make-up day for a day lost to inclement weather. If Saturday is not a make-up day, all hours on Saturday shall be paid at time and one-half the hourly rate, inclusive of benefits.

- Four 10-hour days may be worked, Monday to Thursday, at straight time. Friday may be used as a make-up day for a day lost to inclement weather. If Friday is not a make-up day, all hours on Friday shall be paid at time and one-half the hourly rate, inclusive of benefits.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans Day, Thanksgiving Day, Christmas Day.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - MONMOUTH

Craft: Laborer - Asbestos & Hazardous Waste Removal

PREVAILING WAGE RATE

	10/20/20
Journeyman (Handler)	W32.98 B23.66 T56.64

Craft: Laborer - Asbestos & Hazardous Waste Removal

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
Yearly	19.79	23.09	26.38	29.68						
Benefit	21.51	for	all	intervals						

Ratio of Apprentices to Journeymen - *

* Ratio of apprentices to journeymen shall not be more than one apprentice for the first journeyman and no more than one (1) apprentice for each additional three (3) journeymen.

Craft: Laborer - Asbestos & Hazardous Waste Removal

COMMENTS/NOTES

NOTE: These rates apply to work in connection with Asbestos, Radiation, Hazardous Waste, Lead, Chemical, Biological, Mold Remediation and Abatement.

The regular workday shall be 8 hours.

OVERTIME:

- Hours in excess of 8 per day, Monday through Saturday, and all hours on Sunday and holidays shall be paid at time and one-half the regular rate.
- Benefits on ALL overtime hours shall be paid at straight time.

RECOGNIZED HOLIDAYS: New Year's Day, President's Day, Easter, Memorial Day, July 4th, Labor Day, Veterans Day, Thanksgiving Day, Christmas Day. (Holidays start at 12:00 am).

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - MONMOUTH

Craft: Laborer - Building

PREVAILING WAGE RATE

	05/19/22
Class A Journeyman	W36.50 B30.62 T67.12
Class B Journeyman	W35.75 B30.62 T66.37
Class C Journeyman	W30.39 B30.62 T61.01
Foreman	W41.06 B30.62 T71.68
General Foreman	W45.63 B30.62 T76.25

Craft: Laborer - Building

APPRENTICE RATE SCHEDULE

<u>INTERVAL</u>	<u>PERIOD AND RATES</u>									
	60%	70%	80%	90%						
6 Months										
Benefit	27.37	27.37	27.37	27.37						

Ratio of Apprentices to Journeymen - *

* Ratio of apprentices to journeymen shall not be more than one apprentice for the first journeyman and no more than one (1) apprentice for each additional three (3) journeymen.

Craft: Laborer - Building

COMMENTS/NOTES

CLASS A: Specialist laborer including mason tender or concrete pour crew; scaffold builder (scaffolds up to 14 feet in height); operator of forklifts, Bobcats (or equivalent machinery), jack hammers, tampers, motorized tampers and compactors, vibrators, street cleaning machines, hydro demolition equipment, riding motor buggies, conveyors, burners; and nozzle men on gunite work.

CLASS B: Basic laborer - includes all laborer work not listed in Class A or Class C.

CLASS C: Janitorial-type light clean-up work associated with the TURNOVER of a project, or part of a project, to the owner. All other clean-up work is Class B.

The regular workday shall be 8 hours between 6:00 AM and 6:00 PM.

SHIFT DIFFERENTIALS:

- Shift work must run for a minimum of 5 consecutive workdays.
- When a 2-shift schedule is worked, including a day shift, both shifts shall be established on the basis of 8 hours pay for 8 hours worked. The second shift shall receive the regular rate plus an additional 10%.
- When a 3-shift schedule is worked, the day shift shall be established on the basis of 8 hours pay for 8 hours worked, the second shift shall be established on the basis of 8 hours pay for 7.5 hours worked, and the third shift shall be established

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - MONMOUTH

on the basis of 8 hours pay for 7 hours worked. The day shift shall receive the regular rate, the second shift shall receive the regular rate plus an additional 10%, and the third shift shall receive the regular rate plus an additional 15%.

- When a second or third shift is worked with no day shift, the second or third shift shall be established on the basis of 8 hours pay for 8 hours worked. The second shift shall receive the regular rate plus an additional 10%, and the third shift shall receive the regular rate plus an additional 15%.

OVERTIME:

- Hours in excess of 8 per day, or outside the regular workday that are not shift work, Monday through Friday, and all hours on Saturdays shall be paid at time and one-half the regular rate. Saturday may be used as a make-up day (paid at straight time) for a day lost to inclement weather, or for a holiday that is observed during the work week, Monday through Friday. All hours on Sundays and holidays shall be paid at double the regular rate.

- Four 10-hour days may be worked Monday to Thursday, at straight time, with Friday used a make-up day for a day lost to inclement weather. If Friday is not a make-up day, all hours on Friday shall be paid at time and one-half the regular rate.

- Benefits on ALL overtime hours shall be paid at time and one-half.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Veterans Day, Thanksgiving Day, Christmas Day. Sunday holidays observed the following Monday.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - MONMOUTH

Craft: Laborer - Heavy & General

PREVAILING WAGE RATE

Rates are located in the
"Statewide" rate package

Craft: Laborer - Heavy & General

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
1000 Hours	60%	70%	80%	90%						
Benefit	23.38	for	all	intervals						

Ratio of Apprentices to Journeymen - *

* No more than 1 apprentice for the first journeyman and no more than 1 apprentice for each additional 3 journeymen.

Craft: Laborer - Heavy & General

COMMENTS/NOTES

Heavy & General Laborer rates are located in the "Statewide" rate package.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - MONMOUTH

Craft: Laborer-Residential and Modular Construction

PREVAILING WAGE RATE

	04/01/22	04/01/23
* Skilled Tradesman (only applies to Modular Construction)	W27.55 B5.45 T33.00	W27.90 B5.45 T33.35
Foreman (person directing crew, regardless of his skill classification)	W31.55 B5.45 T37.00	W31.90 B5.45 T37.35
Laborer (for single family and stand-alone duplex owned by single owner)	W17.50 B2.95 T20.45	W17.85 B2.95 T20.80
Residential and Modular Construction Laborer	W23.55 B5.45 T29.00	W23.90 B5.45 T29.35

Craft: Laborer-Residential and Modular Construction

APPRENTICE RATE SCHEDULE

<u>INTERVAL</u>	<u>PERIOD AND RATES</u>									
	As shown	800 hours	600 hours	600 hours						
wage & benefits	70%	80%	90%							

Ratio of Apprentices to Journeymen-

One (1) apprentice shall be allowed for the first journeyman on site and no more than one (1) additional apprentice for each additional three (3) journeymen on site.

Craft: Laborer-Residential and Modular Construction

COMMENTS/NOTES

* SKILLED TRADESMAN- any worker doing work not typically done by a Building Laborer. Some examples are installing interior doors, sheet rock, hooking up appliances, installing light fixtures, installing railing systems, etc. Please note where local building codes require that certain work be performed under the supervision of a licensed tradesman (i.e. Plumber, Electrician, etc.) Laborers shall work under such supervision.

RESIDENTIAL CONSTRUCTION- All residential construction (not commercial), single-family, stand-alone duplex houses, townhouses and multi-family buildings of not more than four (4) floors. Each housing unit must be fully and independently functional; each housing unit must have its own kitchen and bathroom. The definition includes all incidental items such as site work, parking areas, utilities, streets and sidewalks. Please note the construction must be Residential in nature. A First Floor at or below grade may contain commercial space not to exceed 50% square footage of the floor; at least 50% of the First Floor must contain living accommodations or related nonresidential uses (e.g. laundry space, recreation/hobby rooms, and/or corridor space). Basement stories below grade used for storage, parking, mechanical systems/equipment, etc., are considered basement stories which are not used in determining the building's height. An attic is an unfinished space located immediately below the roof. Such space is not used in determining a building's height even if used for storage purposes. In addition, barracks and dormitories are not considered residential projects.

MODULAR RESIDENTIAL CONSTRUCTION- all aspects of modular residential construction (not commercial) at the site of installation of structures of no more than four (4) stories, including all excavation and site preparation, footings and

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - MONMOUTH

foundation systems whether poured on-site or prefabricated, all underground waterproofing, underground utilities, concrete slabs, sidewalks, driveways, paving, hardscape and landscaping. Please note the construction must be Residential as defined above. All work performed by the Set Crew (the crew of workers who set the modular boxes on the foundation), including the rigging, setting, attaching and assembly of all modules and structural members, preparation of the foundation to accept modules, such as sill plates, connection of all in-module and under-module connections including, but not limited to, plumbing, electrical, HVAC, fire suppression, CATS, telephone, television/internet, and fiber optic, the building or installation of any porches or decks regardless of material or method of construction, the on-site installation of, or completion of any roof system, doors, windows and fenestrations, including flashing, gutter and soffit systems, waterproofing, insulation and interior and exterior trim work, and painting. Please note that modular construction does not include on-site stick built construction, tip up construction or panel built construction.

The regular workday shall be 8 hours between 6:00 AM and 6:00 PM.

OVERTIME:

Hours worked in excess of 8 per day/40 per week, Monday through Saturday, and all hours worked on Sunday and holidays shall be paid at time and one-half the hourly rate.

RECOGNIZED HOILDAYS:

New Year's Day, Martin Luther King Day, Memorial Day, July 4th, Labor Day, Thanksgiving Day and Christmas Day.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - MONMOUTH

Craft: Operating Engineer - Field Engineer

PREVAILING WAGE RATE

Rates are located in the
"Statewide" rate package

Craft: Operating Engineer - Field Engineer

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
Yearly	70%	75%	of Rod/	Chainman	Wage					
Yearly			80%	90%	Transit/	Instrument	man	Wage		

Ratio of Apprentices to Journeymen - *

* No more than 1 Field Engineer Apprentice per Survey Crew.

Craft: Operating Engineer - Field Engineer

COMMENTS/NOTES

Operating Engineer - Field Engineer rates are located in the "Statewide" rate package.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - MONMOUTH

Craft: Painter - Line Striping

PREVAILING WAGE RATE

	02/03/22
Apprentice (1st year)	W28.35 B13.80 T42.15
Apprentice (2nd year)	W32.35 B24.75 T57.10
Foreman (Charge Person)	W41.00 B25.53 T66.53
Journeyman 1 (at least 1 year of working exp. as a journeyman)	W36.23 B25.53 T61.76
Journeyman 2 (at least 2 years of working exp. as a journeyman)	W40.00 B25.53 T65.53

Craft: Painter - Line Striping

COMMENTS/NOTES

OVERTIME:

Hours in excess of 8 per day, Monday through Saturday, and all hours on Sundays and holidays shall be paid at time and one-half the hourly rate.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Veterans Day, Thanksgiving Day and Christmas Day. Veterans Day may be substituted for the day after Thanksgiving.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - MONMOUTH

Craft: Paperhanger PREVAILING WAGE RATE

	05/18/22
Foreman	W51.90 B28.21 T80.11
Journeyman	W47.19 B28.21 T75.40

Craft: Paperhanger APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
	SEE	COMME R	CIAL	PAINTER						

Craft: Paperhanger COMMENTS/NOTES

FOREMEN REQUIREMENTS:

- When there are 4 or more Paperhangers on a job, 1 shall be designated a Foreman.

The regular workday shall consist of 8 hours between 7:00 AM and 5:30 PM.

SHIFT DIFFERENTIALS:

- The second shift shall receive an additional 10% of the hourly rate, per hour, and the third shift shall receive an additional 15% of the hourly rate, per hour.

OVERTIME:

- Hours in excess of 8 per day, Monday through Friday, and all hours on Saturdays shall be paid at time and one-half the regular rate. All hours on Sundays and holidays shall be paid at double the regular rate.
- Saturday or Sunday may be used to make up a day lost to inclement weather, at straight time.
- Four 10-hour days may be worked, at straight time, Monday through Friday.

RECOGNIZED HOLIDAYS: New Year's Day, President's Day, Memorial Day, July 4th, Labor Day, General Election Day, Veterans Day, Thanksgiving Day, Christmas Day

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - MONMOUTH

Craft: Pipefitter

PREVAILING WAGE RATE

Craft: Pipefitter

COMMENTS/NOTES

See PLUMBERS Rates

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - MONMOUTH

Craft: Plasterer

PREVAILING WAGE RATE

See "Cement Mason" Rates

Craft: Plasterer

COMMENTS/NOTES

See CEMENT MASON Rates

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - MONMOUTH

Craft: Plumber PREVAILING WAGE RATE

	07/01/22
Assistant General Foreman	W58.20 B44.10 T102.30
Foreman	W57.66 B44.10 T101.76
General Foreman	W60.87 B44.10 T104.97
Journeyman	W53.39 B44.10 T97.49

Craft: Plumber APPRENTICE RATE SCHEDULE

<u>INTERVAL</u>	<u>PERIOD AND RATES</u>									
Yearly	35%	45%	55%	65%	75%					
Benefits	27.28	29.86	32.45	35.04	37.63					

Ratio of Apprentices to Journeymen - 1:4

Craft: Plumber COMMENTS/NOTES

The regular workday shall consist of 8 hours between 6:00 AM and 4:30 PM.

FOREMAN REQUIREMENTS (number of Plumbers on site):

- (1 to 8)- 1 Foreman
- (9 to 16)- 1 Foreman and 1 Assistant General Foreman
- (17 to 40)- 1 Foreman for every (1 to 8 Plumbers) and 1 Assistant General Foreman every (1 to 5 gangs). One note, a "gang" is a group of 8 men.
- (41 and more)- 1 Foreman for every (1 to 8 Plumbers), 1 Assistant General Foreman every (1 to 5 gangs) and 1 General Foreman. One note, for every additional Assistant General Foreman over five designated, the General Foreman shall receive an additional 10 cents per hour.

SHIFT DIFFERENTIALS:

- The second shift shall work 7.5 hours and receive 8 hours pay, at a rate equal to the hourly rate plus 25%, inclusive of benefits.
- When a third shift is worked, the third shift shall work 7.5 hours and receive 8 hours pay, at a rate equal to the hourly rate plus 30%, inclusive of benefits.
- A second shift may be established without a first shift, provided the second shift starts at 1:00 PM or later.

OVERTIME:

- Hours in excess of 8 per day, or before of after the regular workday, Monday through Friday, that are not shift work, and the first 10 hours on Saturdays, shall be paid at time and one-half, inclusive of benefits. Hours in excess of 10 on

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - MONMOUTH

Saturdays, and all hours on Sundays and holidays, shall be paid at double time, inclusive of benefits.

- Four 10-hour days may be worked, Mon to Thurs, at straight time, with Friday used as a make-up day for a day lost due to inclement weather. If Fri. is not a make-up day, the first 10 hours shall be paid at time and one-half, and hours in excess of 10 at double time, inclusive of benefits.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans' Day, Thanksgiving Day, Christmas Day. Sunday holidays will be observed the following Monday.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - MONMOUTH

Craft: Roofer PREVAILING WAGE RATE

	06/01/22
Foreman	W45.52 B29.81 T75.33
Journeyman	W42.52 B29.81 T72.33

Craft: Roofer APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
6 Months	17.00	21.26	25.51	27.64	29.76	31.89	34.01	38.27		
Benefits	2.16	2.16	26.56	26.56	26.56	26.56	26.56	26.56		

Ratio of Apprentices to Journeymen - *

- * [A] For roofing jobs that are of the 1 or single ply nature: 1:2 or fraction thereof
- [B] For roofing jobs on new built up roofs 1:3 or fraction thereof
- [C] For roofing jobs that are of a tear-off nature: 1:2 or fraction thereof
- [D] For re-roofing jobs (not requiring complete removal of existing systems, installation done over existing roof): 1:3 or fraction thereof.

Craft: Roofer COMMENTS/NOTES

Pitch: +.50 per hour

Mop Man: +.30 per hour

The regular workday consists of 8 hours between 8:00 AM and 4:30 PM.

OVERTIME:

Hours in excess of 8 per day, or before or after the regular workday, Monday through Friday, and all hours on Saturdays, Sundays, and holidays shall be paid at time and one-half the regular rate.

RECOGNIZED HOLIDAYS: New Year's Day, Good Friday, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans' Day, Thanksgiving Day, Christmas Day.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - MONMOUTH

Craft: Sheet Metal Sign Installation

PREVAILING WAGE RATE

	04/01/22
Foreman	W41.29 B38.97 T80.26
Journeyman	W39.29 B38.97 T78.26

Craft: Sheet Metal Sign Installation

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
1000 hours	35%	40%	45%	50%	55%	60%	65%	70%	75%	80%
Benefits	13.19	15.02	16.88	18.74	21.06	22.94	24.83	26.73	28.62	30.50

Ratio of Apprentices to Journeymen - 1:3

Craft: Sheet Metal Sign Installation

COMMENTS/NOTES

FOREMAN REQUIREMENT:

When there are 6 or more Sheet Metal Sign Installers on a job, 1 shall be designated a Foreman.

The regular workday consists of 8 hours, between 7:00 AM and 3:30 PM.

OVERTIME:

Hours before or after the regular workday, Monday through Friday, and all hours worked on Saturday shall be paid at time and one-half the hourly rate. All hours on Sunday and holidays shall be paid at double the hourly rate.

Four(4) 10 hour days may be worked, Monday through Friday, at straight time, for projects lasting at least one week in duration. The fifth day may be used as a make-up day at straight time for a day lost due to inclement weather. However, if the fifth day is not a make-up day, all hours worked will be paid at time and one-half the hourly rate.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Good Friday, Memorial Day, July 4th, Labor Day, Veterans' Day, Thanksgiving Day and the day after, Christmas Day. Saturday holidays observed the preceding Friday, Sunday holidays observed the following Monday.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - MONMOUTH

hours on Saturday, shall be paid at time and one-half the regular rate. All hours on Sundays and holidays shall be paid at double the regular rate.

- Benefits on overtime hours are as follows:

Time and one-half = \$53.04.

Double-time = \$60.34.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Good Friday, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans' Day, Thanksgiving Day, Christmas Day. Saturday holidays will be observed the preceding Friday, Sunday holidays will be observed the following Monday.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - MONMOUTH

Craft: Sprinkler Fitter

PREVAILING WAGE RATE

	07/01/22
Foreman	W70.38 B35.24 T105.62
General Foreman	W73.78 B35.24 T109.02
Journeyman	W65.88 B35.24 T101.12

Craft: Sprinkler Fitter

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
1000 hours									80%	85%
Benefits							Intervals	9 to 10	Jourymn	Ben.

Ratio of Apprentices to Journeymen - 1:3

Craft: Sprinkler Fitter

COMMENTS/NOTES

Apprentice rate schedule for those apprentices registered as of 7-1-13:

Interval Period and Rates
 1000 Hrs. 25% 30% 40% 45% 55% 60% 70% 75% 85% 90%
 Ben. 13.14 13.14 27.74 27.74 27.74 27.74 Intervals 7-10 Journey. Ben.

Apprentice rate schedule for those apprentices registered as of 7-1-22:

Interval Period and Rates
 1000 Hrs. 30% 35% 40% 45% 50% 55% 60% 70% 85% 95%
 Ben. 13.14 13.14 27.74 27.74 27.74 27.74 Intervals 7-10 Journey. Ben

The regular workday consists of 8 consecutive hours between 6:00 AM and 4:30 PM.

FOREMAN REQUIREMENTS:

- The first Sprinkler Fitter on the job must be designated a Foreman.
- On any job having 12 or more Sprinkler Fitters, one must be designated a General Foreman.

SHIFT DIFFERENTIALS:

- Shift work must run for a minimum of 2 consecutive workdays.
- 2nd and 3rd shift shall receive an additional 15% of the regular rate, per hour.
- Any "off hours" shift starting at 8:00 PM or later shall receive an additional 25% of the regular rate, per hour.

OVERTIME:

The first 2 hours in excess of 8 per day, after the regular workday that are not shift work, Monday through Friday, shall be

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - MONMOUTH

paid at time and one-half the regular rate. Hours worked in excess of 10 per day, Monday through Friday, and all hours on Saturday, Sunday and holidays, shall be paid double the regular rate.

Four 10 hour days may be worked, Monday through Friday, at straight-time.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Veterans Day, Thanksgiving Day, Christmas Day.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - MONMOUTH

Craft: Tile Setter - Ceramic

PREVAILING WAGE RATE

	06/06/22
Finisher	W47.60 B32.11 T79.71
Setter	W62.01 B35.28 T97.29

Craft: Tile Setter - Ceramic

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
750 Hours	35%	40%	50%	55%	60%	65%	70%	75%	80%	90%

Ratio of Apprentices to Journeymen - 1:4

Craft: Tile Setter - Ceramic

COMMENTS/NOTES

OVERTIME:

Hours in excess of 7 per day, and the first 10 hours on Saturdays shall be paid at time and one-half the hourly rate. All hours on Saturdays after 10 hours shall be paid double the hourly rate. All hours on Sundays and holidays shall be paid at double the hourly rate.

RECOGNIZED HOLIDAYS: New Year's Day, Memorial Day, July 4th, Labor Day, Thanksgiving Day, Christmas Day.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - MONMOUTH

Craft: Tile Setter - Marble

PREVAILING WAGE RATE

	07/05/22
Tile Setter	W62.40 B38.82 T101.22

Craft: Tile Setter - Marble

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
750 Hours	40%	60%	65%	70%	75%	85%	95%			
Benefits	Interval 1	thru 5 =	75% of	jyrnm. ben	rate	Interval 6	thru 7 =	full jyrnm	benefit	rate

Ratio of Apprentices to Journeymen - 1:4

Craft: Tile Setter - Marble

COMMENTS/NOTES

OVERTIME:

Hours in excess of 7 per day, Monday through Friday, and the first 7 hours on Saturdays shall be paid at time and one-half the regular rate, inclusive of benefits. Hours in excess of 7 on Saturdays, and all hours on Sundays and holidays shall be paid at double the regular rate, inclusive of benefits.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Good Friday, Memorial Day, July 4th, Labor Day, Columbus Day, Veterans' Day, Thanksgiving Day and the day after, Christmas Day. Sunday holidays observed the following Monday.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - MONMOUTH

Craft: Tile Setter - Mosaic & Terrazzo

PREVAILING WAGE RATE

	07/01/22
Grinder or Assistant	W58.14 B38.59 T96.73
Mechanic	W59.75 B38.60 T98.35
Terrazzo Resinous Worker	W49.84 B31.32 T81.16

Craft: Tile Setter - Mosaic & Terrazzo

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
750 Hours	50%	55%	60%	65%	70%	75%	85%	95%	100%	

Ratio of Apprentices to Journeymen - 1:5

Craft: Tile Setter - Mosaic & Terrazzo

COMMENTS/NOTES

APPRENTICE RATE SCHEDULE FOR THOSE APPRENTICES ENTERING PROGRAM AFTER 7-1-17:

INTERVAL	PERIOD AND RATES						
1500 Hours	35%	45%	60%	70%	80%	90%	100%

The regular workday consists of 7 hours, between 8:00 AM and 3:30 PM.

OVERTIME:

- Hours in excess of 7 per day, or before or after the regular workday, Monday through Friday, and all hours on Saturdays shall be paid at time and one-half the hourly rate. All hours on Sundays and holidays shall be paid at double the hourly rate.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Good Friday, Monday after Easter, Memorial Day, July 4th, Labor Day, Columbus Day, Veterans' Day, Thanksgiving Day and the day after, Christmas Day. Sunday holidays observed the following Monday.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - MONMOUTH

Craft: Truck Driver

PREVAILING WAGE RATE

	05/06/22	05/01/23	05/01/24
Bucket, Utility, Pick-up, Fuel Delivery trucks	W44.81 B36.92 T81.73	W0.00 B0.00 T85.08	W0.00 B0.00 T88.43
Dump truck (single axle), Asphalt Distributor, Tack Spreader	W44.81 B36.92 T81.73	W0.00 B0.00 T85.08	W0.00 B0.00 T88.43
Euclid-type vehicles (large off-road equipment)	W44.96 B36.92 T81.88	W0.00 B0.00 T85.23	W0.00 B0.00 T88.58
Helper on Asphalt Distributor truck	W44.81 B36.92 T81.73	W0.00 B0.00 T85.08	W0.00 B0.00 T88.43
Low Boy Driver	W46.46 B36.92 T83.38	W0.00 B0.00 T86.73	W0.00 B0.00 T90.08
Slurry Seal, Seeding/Fertilizing/Mulchi ng truck	W44.81 B36.92 T81.73	W0.00 B0.00 T85.08	W0.00 B0.00 T88.43
Straight 3-axle trucks, Dump Truck (3-axle), Dump Truck (tandem)	W44.86 B36.92 T81.78	W0.00 B0.00 T85.13	W0.00 B0.00 T88.48
Tractor-Trailer truck (all types)	W44.96 B36.92 T81.88	W0.00 B0.00 T85.23	W0.00 B0.00 T88.58
Vacuum or Vac-All truck (entire unit)	W44.81 B36.92 T81.73	W0.00 B0.00 T85.08	W0.00 B0.00 T88.43
Winch Trailer Driver	W45.06 B36.92 T81.98	W0.00 B0.00 T85.33	W0.00 B0.00 T88.68

Craft: Truck Driver

COMMENTS/NOTES

Foreman: + \$.75 cents per hour. Overtime rate shall be increased accordingly.

HAZARDOUS WASTE REMOVAL WORK:

- On a hazardous waste site requiring Level A, B, or C personal protection for any worker: + \$3.00 per hour.
- On a hazardous waste site not designated Level A, B, or C: + \$1.00 per hour.

The regular workday consists of 8 hours starting between 6:00 AM and 8:00 AM.

SHIFT DIFFERENTIAL:

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - MONMOUTH

Any shift starting at a time other than 6:00 AM or 8:00 AM shall receive an additional \$3.00 per hour.

BLENDED RATE:

- When a truck driver is performing work on site and also serving as a material delivery driver, the driver shall be paid a "blended rate" which shall be 80% of the above-listed wage rates, plus the full benefit rate. This rate shall be used when the driver "round robins" for a minimum of 6 hours during the work day.

OVERTIME:

- Hours in excess of 8 per day, or before or after the regular workday that are not shift work, Monday through Friday, and all hours on Saturdays shall be paid at time and one-half the hourly rate. All hours on Sundays and holidays shall be paid at double the hourly rate.

- Benefits on overtime shall be \$43.44.

- Four 10-hour days may be worked, Monday through Thursday, at straight time, with Friday used as a make-up day for a day lost to inclement weather. If Friday is not a make-up day, all hours on Friday shall be paid at time and one-half the hourly rate.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Veteran's Day, Thanksgiving Day, Christmas Day. Veteran's Day may be substituted for the day after Thanksgiving. Sunday holidays will be observed the following Monday.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - MONMOUTH

Craft: Truck Driver-Material Delivery Driver

PREVAILING WAGE RATE

	05/06/22	05/01/23	05/01/24
Driver	W35.84 B36.92 T72.76	W0.00 B0.00 T76.95	W0.00 B0.00 T81.14
New Hires: 1st Year	W35.84 B36.92 T72.76	W0.00 B0.00 T76.95	W0.00 B0.00 T81.14

Craft: Truck Driver-Material Delivery Driver

COMMENTS/NOTES

NOTE: These rates may only be used for the delivery of *materials TO the job site (*building materials that will become a permanent part of the job site, such as sand, stone, aggregates, asphalt, sheetrock, 2x4's, etc.). In addition, only the following types of truck may be used for such deliveries (Dump Truck or Flat-bed truck). Please note that this rate does not apply to material suppliers or their employees (who do not perform services at the job site), and for the delivery of equipment and/or items that will not become a permanent part of the job site.

OVERTIME: Hours in excess of 8 per day, Monday through Friday, and all hours on Saturdays shall be paid at time and one-half the hourly rate. All hours on Sundays and holidays shall be paid at double the hourly rate. Benefits on overtime shall be \$43.44.

RECOGNIZED HOLIDAYS: New Year's Day, President's Day, Memorial Day, July 4th, Labor Day, Veterans's Day, Thanksgiving Day, Christmas Day. Veteran's Day may be substituted for the day after Thanksgiving. Sunday holidays will be observed the following Monday.

**NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION**

County - MONMOUTH

Craft: Welder PREVAILING WAGE RATE

Welder

Craft: Welder COMMENTS/NOTES

Welders rate is the same as the craft to which the welding is incidental .

STATEWIDE RATES

OPERATING ENGINEERS **Rates Expiration Date :**

{For apprentice rates refer to "Operating Engineers" apprentice rates in any county rate package}

The regular workday consists of 8 hours, Monday to Friday, between 6:00 AM and 5:30 PM.

SHIFT DIFFERENTIALS:

- Shift work must be established for 5 consecutive workdays.
- Any work started outside of the allowed start time, 6:00 AM to 9:00 AM, except for * tidal work, shall be considered an irregular shift and paid at straight time, plus 15% for the first eight hours, inclusive of benefits.
- * FOR TIDAL WORK- a contractor can start their job according to tide schedules (tide schedules are the various high and low tides related to this work), providing the eight hour shift is completed between the hours of 5:00 AM and 6:30 PM.
- All time worked in excess of an established shift (an established shift is a shift that is determined at the time of the bid) shall be paid at the applicable overtime rate. When a portion of an established shift works into Saturday, Sunday or a holiday, that time worked shall be paid at the established shift rate.
- When working with other trades who receive a higher irregular shift differential, these employees shall also receive the higher differential rate.

OVERTIME:

- Hours in excess of 8 per day, or outside of the regular workday, Monday through Friday, that are not shift work, and all hours on Saturday shall be paid at time and one-half the regular rate, inclusive of benefits. All hours on Sunday and holidays shall be paid at double the regular rate, inclusive of benefits.
- Four 10-hour days may be worked, Monday through Thursday, at straight time, with all hours on Friday paid at time and one-half the regular rate, inclusive of benefits.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans Day, Thanksgiving Day, Christmas Day. Sunday holidays observed the following Monday. When all trades on a particular job site agree, the day after Thanksgiving may be substituted for Veterans Day.

For projects bid after April 1, 2020, on hazardous waste removal work of any kind, including a state or federally designated site, where the operating engineer is required to wear level A, B, or C personal protection, the operating engineer shall receive an hourly wage rate of his regular hourly wage plus \$5.00 per hour.

- An operating engineer working at a hazardous waste removal project or site at a task requiring hazardous waste related certification, but who is not working in a zone requiring level A, B, or C personal protection, shall receive an hourly wage rate of his regular rate plus \$1.00 per hour.

OPERATING ENGINEERS **Rates Expiration Date :**

Effective Dates:

07/01/2022

Rate	Fringe	Total
55.63	36.65	92.28

CLASSIFICATIONS:

A-Frame

Backhoe (combination)

Boom Attachment on loaders (Except pipehook)

Boring & Drilling Machine

Brush Chopper, Brush Shredder, Tree Shredder, Tree Shearer

Bulldozer, finish grade

Cableway

Carryall

Concrete Pump

Concrete Pumping System (Pumpcrete & similar types)

Conveyor, 125 feet or longer

Drill Doctor (Duties include dust collector and maintenance)

Front End Loader (2 cu. yds. but less than 5 cu. yds.)

Grader, finish

Groove Cutting Machine (ride-on type)

Heater Planer

Hoist: Outside Material Tower Hoist (all types including steam, gas, diesel, electric, air hydraulic, single and double drum, concrete, brick shaft caisson, snorkle roof, and other similar types, Except Chicago-boom type) * receives an additional \$1.00 per hour on 100 ft. up to 199 ft. total height, and an additional \$2.00 per hour on 200 ft. and over total height.

Hydraulic Crane (10 tons & under)

Hydraulic Dredge

Hydro-Axe

Hydro-Blaster

OPERATING ENGINEERS **Rates Expiration Date :**

Effective Dates:

07/01/2022

Rate	Fringe	Total
55.63	36.65	92.28

CLASSIFICATIONS:

Jack (screw, air hydraulic, power-operated unit, or console type, Except hand jack or pile load test type)

Log Skidder

Pan

Paver, concrete

Plate & Frame Filter Press

Pumpcrete (unit type)

Pumpcrete, Squeezecrete, or Concrete Pumping machine (regardless of size)

Scraper

Side Boom

Straddle Carrier (Ross and similar types)

Whiphammer

Winch Truck (hoisting)

OPERATING ENGINEERS **Rates Expiration Date :**

Effective Dates:

07/01/2022

Rate	Fringe	Total
53.72	36.65	90.37

CLASSIFICATIONS:

- Asphalt Curbing Machine
- Asphalt Plant Engineer
- Asphalt Spreader
- Autograde Curb Trimmer & Sidewalk Shoulder Slipform (CMI & similar types)
- Autograde Curecrete Machine (CMI & similar types)
- Autograde Tube Finisher & Texturing Machine (CMI & similar types)
- Bar Bending Machines (Power)
- Batcher, Batching Plant, & Crusher [On Site]
- Belt Conveyor System
- Boom-Type Skimmer Machine
- Bridge Deck Finisher
- Bulldozer (all sizes)
- Captain (Power Boats)
- Car Dumper (railroad)
- Compressor & Blower unit for loading/unloading of concrete, cement, fly ash, or similar type materials (used independently or truck-mounted)
- Compressor (2 or 3 battery)
- Concrete Breaking Machine
- Concrete Cleaning/Decontamination Machine
- Concrete Finishing Machine
- Concrete Saw or Cutter (ride-on type)
- Concrete Spreader (Hetzl, Rexomatic & similar types)
- Concrete Vibrator

OPERATING ENGINEERS **Rates Expiration Date :**

Effective Dates:

07/01/2022

Rate	Fringe	Total
53.72	36.65	90.37

CLASSIFICATIONS:

- Conveyors - under 125 feet
- Crane Signalman
- Crushing Machine
- Directional Boring Machine
- Ditching Machine - Small (Ditchwitch, Vermeer or similar types)
- Dope Pot - Mechanical (with or without pump)
- Dumpster
- Elevator
- Fireman
- Fork Lift (Economobile, Lull & similar types)
- Front End Loader (1 cu. yd. and over but less than 2 cu. yds.)
- Generator (2 or 3 battery)
- Giraffe Grinder
- Goldhofer/Hydraulic Jacking Trailer
- Grader & Motor Patrols
- Grout Pump
- Gunnite Machine (Excluding nozzle)
- Hammer - Vibratory (in conjunction with generator)
- Heavy Equipment Robotics - Operator/Technician
- Hoist (roof, tigger, aerial platform hoist, house car)
- Hopper
- Hopper Doors (power operated)
- Ladder (motorized)

OPERATING ENGINEERS **Rates Expiration Date :**

Effective Dates:

07/01/2022

Rate	Fringe	Total
53.72	36.65	90.37

CLASSIFICATIONS:

Laddervator

Locomotive (Dinky-type)

Maintenance Utility Man

Master Environmental Maintenance Technician

Mechanic

Mixer (Except paving mixers)

Pavement Breaker (truck-mounted or small self-propelled
ride-on type)

Pavement Breaker - maintenance of compressor or hydraulic unit

Pipe Bending Machine (power)

Pitch Pump

Plaster Pump (regardless of size)

Post Hole Digger (post pounder, auger)

Rod Bending Machines

Roller (black top)

Scale (power)

Seamen Pulverizing Mixer

Shoulder Widener

Silo

Skimmer Machine (boom type)

Steel Cutting Machine (service & maintenance)

Tamrock Drill

Tractor

Transfer Machines

OPERATING ENGINEERS **Rates Expiration Date :**

Effective Dates:

07/01/2022

Rate	Fringe	Total
53.72	36.65	90.37

CLASSIFICATIONS:

Tug Captains

Tug Master (Power Boats)

Ultra High Pressure Waterjet Cutting Tool System -
Operator/Maintenance Technician

Vacuum Blasting Machine - Operator/Maintenance Technician

Vibrating Plant (used with unloading)

Welder & Repair Mechanic

Effective Dates:

07/01/2022

Rate	Fringe	Total
50.38	36.65	87.03

CLASSIFICATIONS:

Assistant Engineer/Oiler

Driller's Helper

Field Engineer - Transit man or Instrument man

Maintenance Apprentice (Deckhand)

Maintenance Apprentice (Oiler)

Mechanic's Helper

Off Road Back Dump

Tire Repair & Maintenance

Effective Dates:

07/01/2022

Rate	Fringe	Total
47.80	36.65	84.45

CLASSIFICATIONS:

Field Engineer - Rodman or Chainman

TERRITORY
ENTIRE STATE

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION

OPERATING ENGINEERS Rates Expiration Date :

Effective Dates:

07/01/2022

Rate	Fringe	Total
57.96	36.65	94.61

CLASSIFICATIONS:

Lead Engineer, Foreman Engineer, Safety Engineer (minimum)

OPERATING ENGINEERS **Rates Expiration Date :**

Effective Dates:

07/01/2022

Rate	Fringe	Total
57.22	36.65	93.87

CLASSIFICATIONS:

- Autograde Pavement Profiler (CMI & similar types)
- Autograde Pavement Profiler - Recycle Type (CMI & similar types)
- Autograde Placer/Trimmer/Spreader Combination (CMI & similar types)
- Autograde Slipform Paver (CMI & similar types)
- Backhoe (Excavator)
- Central Power Plant
- Concrete Paving Machine
- Cranes, Derricks, Pile Drivers (all types), under 100 tons with a boom (including jib and/or leads) under 100 ft.
- Draglines
- Drill, Bauer, AMI and similar types
- Drillmaster, Quarrymaster
- Drillmaster/Quarrymaster (down-the-hole drill), rotary drill, self-propelled hydraulic drill, self-powered drill
- Elevator Grader
- Field Engineer-Chief of Party
- Front End Loader (5 cu. yards or larger)
- Gradall
- Grader, Rago
- Helicopter Co-Pilot
- Helicopter Communications Engineer
- Juntann Pile Driver
- Locomotive (large)
- Mucking Machine

OPERATING ENGINEERS **Rates Expiration Date :**

Effective Dates:

07/01/2022

Rate	Fringe	Total
57.22	36.65	93.87

CLASSIFICATIONS:

Pavement & Concrete Breaker (Superhammer & Hoe Ram)

Pile Driver

Prentice Truck

Roadway Surface Grinder

Scooper (loader & shovel)

Shovel (Excavator)

Trackhoe (Excavator)

Tree Chopper with boom

Trenching Machine (cable plow)

Tunnel Boring Machine

Vacuum Truck

OPERATING ENGINEERS **Rates Expiration Date :**

Effective Dates:

07/01/2022

Rate	Fringe	Total
52.09	36.65	88.74

CLASSIFICATIONS:

- Chipper
- Compressor (single)
- Concrete Spreader (small type)
- Conveyor Loader (Except elevator graders)
- Engines, Large Diesel (1620 HP) & Staging Pump
- Farm Tractor
- Fertilizing Equipment (operation & maintenance)
- Fine Grade Machine (small type)
- Form Line Grader (small type)
- Front End Loader (under 1 cubic yard)
- Generator (single)
- Grease, Gas, Fuel, & Oil Supply Trucks
- Heaters (Nelson or other type)
- Lights - portable generating light plant
- Mixer, Concrete (small)
- Mulching Equipment (operation & maintenance)
- Power Broom or Sweeper
- Pump (diesel engine & hydraulic - regardless of power)
- Pump (larger than 2 inch suction, including submersible pumps)
- Road Finishing Machine (small type)
- Roller - grade, fill, or stone base
- Seeding Equipment (operation & maintenance)
- Sprinkler & Water Pump Trucks

OPERATING ENGINEERS **Rates Expiration Date :**

Effective Dates:

07/01/2022

Rate	Fringe	Total
52.09	36.65	88.74

CLASSIFICATIONS:

Steam Generator or Boiler

Stone Spreader

Tamping Machine (vibrating ride-on type)

Temporary Heating Plant (Nelson or other type, including propane, natural gas, and flow-type units)

Water or Sprinkler Truck

Welding Machine (gas, diesel, or electric convertor, of any type)

Welding System - Multiple (rectifier transformer type)

Wellpoint Systems (including installation by bull gang and maintenance)

Effective Dates:

07/01/2022

Rate	Fringe	Total
59.04	36.65	95.69

CLASSIFICATIONS:

Helicopter Pilot/Engineer

Effective Dates:

07/01/2022

Rate	Fringe	Total
63.72	36.65	100.37

CLASSIFICATIONS:

Cranes, Derricks, Pile Driver (all types), 100 tons and over and TOWER CRANE with boom (including jib and/or leads) 140 ft. and over

Effective Dates:

07/01/2022

Rate	Fringe	Total
62.72	36.65	99.37

CLASSIFICATIONS:

Cranes, Derricks, Pile Driver (all types), 100 tons and over and TOWER CRANE with boom (including jib and/or leads) from 100 ft. to 139 ft.

OPERATING ENGINEERS **Rates Expiration Date :**

Effective Dates:

07/01/2022

Rate	Fringe	Total
59.22	36.65	95.87

CLASSIFICATIONS:

Cranes, Derricks, Pile Driver (all types) , under 100 tons with a boom (including jib and/or leads) 140 ft. and over

Effective Dates:

07/01/2022

Rate	Fringe	Total
61.72	36.65	98.37

CLASSIFICATIONS:

Cranes, Derricks, Pile Driver (all types), 100 tons and over and TOWER CRANE with a boom (including jib and/or leads) under 100 ft.

Effective Dates:

07/01/2022

Rate	Fringe	Total
58.22	36.65	94.87

CLASSIFICATIONS:

Cranes, Derricks, Pile Driver (all types), under 100 tons with a boom (including jib and/or leads) from 100 ft. to 139 ft.

STRUCTURAL STEEL ERECTION **Rates Expiration Date :**

{For apprentice rates refer to "Operating Engineers" apprentice rates in any county rate package}

The regular workday consists of 8 hours, Monday to Friday, between 6:00 AM and 5:30 PM.

SHIFT DIFFERENTIALS:

- Shift work must be established for 5 consecutive workdays.
- Any work started outside of the allowed start time, 6:00 AM to 9:00 AM, except for * tidal work, shall be considered an irregular shift and paid at straight time, plus 15% for the first eight hours, inclusive of benefits.
- * FOR TIDAL WORK- a contractor can start their job according to tide schedules (tide schedules are the various high and low tides related to this work), providing the eight hour shift is completed between the hours of 5:00 AM and 6:30 PM.
- All time worked in excess of an established shift (an established shift is a shift that is determined at the time of the bid) shall be paid at the applicable overtime rate. When a portion of an established shift works into Saturday, Sunday or a holiday, that time worked shall be paid at the established shift rate.
- When working with other trades who receive a higher irregular shift differential, these employees shall also receive the higher differential rate.

OVERTIME:

- Hours in excess of 8 per day, or outside of the regular workday, Monday through Friday, that are not shift work, and all hours on Saturday shall be paid at time and one-half the regular rate, inclusive of benefits. All hours on Sunday and holidays shall be paid at double the regular rate, inclusive of benefits.
- Four 10-hour days may be worked, Monday through Thursday, at straight time, with all hours on Friday paid at time and one-half the regular rate, inclusive of benefits.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans Day, Thanksgiving Day, Christmas Day. Sunday holidays observed the following Monday. When all trades on a particular job site agree, the day after Thanksgiving may be substituted for Veterans Day.

For projects bid after April 1, 2020, on hazardous waste removal work of any kind, including a state or federally designated site, where the operating engineer is required to wear level A, B, or C personal protection, the operating engineer shall receive an hourly wage rate of his regular hourly wage plus \$5.00 per hour.

- An operating engineer working at a hazardous waste removal project or site at a task requiring hazardous waste related certification, but who is not working in a zone requiring level A, B, or C personal protection, shall receive an hourly wage rate of his regular rate plus \$1.00 per hour.

Effective Dates:

07/01/2022

Rate	Fringe	Total
60.85	36.65	97.50

CLASSIFICATIONS:

Helicopter Co-Pilot & Communications Engineer

TERRITORY
ENTIRE STATE

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION

STRUCTURAL STEEL ERECTION Rates Expiration Date :

Effective Dates:

07/01/2022

Rate	Fringe	Total
56.79	36.65	93.44

CLASSIFICATIONS:

A-Frame

Cherry Picker -10 tons or less (Over 10 tons use crane rate)

Hoist (all types Except Chicago-boom)

Jack (screw, air hydraulic, power-operated unit or console type, Except hand jack or pile load test type)

Side Boom

Straddle Carrier

STRUCTURAL STEEL ERECTION **Rates Expiration Date :**

Effective Dates:

07/01/2022

Rate	Fringe	Total
54.13	36.65	90.78

CLASSIFICATIONS:

- Aerial Platform Used On Hoists
- Apprentice Engineer/Oiler with Compressor or Welding Machine
- Captain (Power Boats)
- Compressor (2 or 3 in battery)
- Concrete Cleaning/Decontamination Machine Operator
- Conveyor or Tugger Hoist
- Directional Boring Machine
- Elevator or House Car
- Fireman
- Forklift
- Generator (2 or 3)
- Heavy Equipment Robotics, Operator/Technician
- Maintenance Utility Man
- Master Environmental Maintenance Technician
- Tug Master (Power Boats)
- Ultra High Pressure Waterjet Cutting Tool System Operator/Maintenance Technician
- Vacuum Blasting Machine Operator/Maintenance Technician
- Welding Machines, Gas or Electric Converters on any type-2 or 3 in battery including diesels

STRUCTURAL STEEL ERECTION **Rates Expiration Date :**

Effective Dates:

07/01/2022

Rate	Fringe	Total
52.60	36.65	89.25

CLASSIFICATIONS:

Compressor (Single)

Generators

Welding Machines, Gas, Diesel, Or Electric Converters of any type-single

Welding System, Multiple (Rectifier Transformer Type)

Effective Dates:

07/01/2022

Rate	Fringe	Total
50.84	36.65	87.49

CLASSIFICATIONS:

Assistant Engineer/Oiler

Drillers Helper

Field Engineer - Transit/Instrument Man

Maintenance Apprentice (Deckhand)

Maintenance Apprentice (Oiler)

Off Road Back Dump

Effective Dates:

07/01/2022

Rate	Fringe	Total
58.41	36.65	95.06

CLASSIFICATIONS:

Lead Engineer, Foreman Engineer, Safety Engineer (Minimum)

Effective Dates:

07/01/2022

Rate	Fringe	Total
47.80	36.65	84.45

CLASSIFICATIONS:

Field Engineer - Rodman or Chainman

STRUCTURAL STEEL ERECTION **Rates Expiration Date :**

Effective Dates:

07/01/2022

Rate	Fringe	Total
57.55	36.65	94.20

CLASSIFICATIONS:

Field Engineer-Chief of Party

Vacuum Truck

Effective Dates:

07/01/2022

Rate	Fringe	Total
65.74	36.65	102.39

CLASSIFICATIONS:

Cranes (all cranes, land or floating with booms, including jib, 140 ft. and over, above ground). Derricks (all derricks, land, floating or Chicago Boom type with booms including jib, 140 ft. and over, above ground), and Pile Drivers (all types) 100 tons and over and Tower Cranes.

Effective Dates:

07/01/2022

Rate	Fringe	Total
64.08	36.65	100.73

CLASSIFICATIONS:

Cranes (all cranes, land or floating with booms including jib, less than 140 ft. above ground), Derricks (all derricks, land, floating or Chicago Boom type with booms including jib, less than 140 ft. above ground), Pile Drivers (all types), 100 tons and over and Tower Crane.

Effective Dates:

07/01/2022

Rate	Fringe	Total
61.24	36.65	97.89

CLASSIFICATIONS:

Cranes (all cranes, land or floating with booms including jib, 140 ft. and over, above ground), Derricks (all derricks, land, floating or Chicago Boom type with booms including jib, 140 ft. and over, above ground), Pile Drivers (all types), under 100 tons.

Effective Dates:

07/01/2022

Rate	Fringe	Total
59.58	36.65	96.23

CLASSIFICATIONS:

Cranes (all cranes, land or floating with booms including jib, less than 140 ft. above ground), Derricks (all derricks, land, floating or Chicago Boom type with booms including jib, less than 140 ft. above ground), Pile Drivers (all types), under 100 tons.

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STRUCTURAL STEEL ERECTION Rates Expiration Date :

Effective Dates:

07/01/2022

Rate	Fringe	Total
61.24	36.65	97.89

CLASSIFICATIONS:

Helicopter Pilot & Engineer

TEST BORING PRELIMINARY TO CONSTRUCTION-SOUTH/WEST **Rates Expiration Date :**

THESE RATES APPLY IN THE FOLLOWING COUNTIES ONLY:

Atlantic, Burlington, Camden, Cape May, Cumberland, Gloucester, Hunterdon, Mercer, Monmouth, Ocean, Salem, Sussex, Warren

The regular workday consists of 8 hours, Monday to Friday, between 6:00 AM and 5:30 PM.

SHIFT DIFFERENTIALS:

- Shift work must be established for 5 consecutive workdays.
- Any work started outside of the allowed start time, 6:00 AM to 9:00 AM, except for * tidal work, shall be considered an irregular shift and paid at straight time, plus 15% for the first eight hours, inclusive of benefits.
- * FOR TIDAL WORK- a contractor can start their job according to tide schedules (tide schedules are the various high and low tides related to this work), providing the eight hour shift is completed between the hours of 5:00 AM and 6:30 PM.
- All time worked in excess of an established shift (an established shift is a shift that is determined at the time of the bid) shall be paid at the applicable overtime rate. When a portion of an established shift works into Saturday, Sunday or a holiday, that time worked shall be paid at the established shift rate.
- When working with other trades who receive a higher irregular shift differential, these employees shall also receive the higher differential rate.

OVERTIME:

- Hours in excess of 8 per day, or outside of the regular workday, Monday through Friday, that are not shift work, and all hours on Saturday shall be paid at time and one-half the regular rate, inclusive of benefits. All hours on Sunday and holidays shall be paid at double the regular rate, inclusive of benefits.
- Four 10-hour days may be worked, Monday through Thursday, at straight time, with all hours on Friday paid at time and one-half the regular rate, inclusive of benefits.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans Day, Thanksgiving Day, Christmas Day. Sunday holidays observed the following Monday. When all trades on a particular job site agree, the day after Thanksgiving may be substituted for Veterans Day.

For projects bid after April 1, 2020, on hazardous waste removal work of any kind, including a state or federally designated site, where the operating engineer is required to wear level A, B, or C personal protection, the operating engineer shall receive an hourly wage rate of his regular hourly wage plus \$5.00 per hour.

- An operating engineer working at a hazardous waste removal project or site at a task requiring hazardous waste related certification, but who is not working in a zone requiring level A, B, or C personal protection, shall receive an hourly wage rate of his regular rate plus \$1.00 per hour.

Effective Dates:

07/01/2022

Rate	Fringe	Total
57.22	36.65	93.87

CLASSIFICATIONS:

Driller

Effective Dates:

07/01/2022

Rate	Fringe	Total
50.38	36.65	87.03

CLASSIFICATIONS:

Driller's Helper

FREE AIR TUNNEL JOBS **Rates Expiration Date :**

{For apprentice rates refer to "Heavy & General" apprentice rates in any county rate package}

The regular workday consists of 8 hours, starting at 7:00 AM or 8:00 AM.

SHIFT DIFFERENTIALS:

- Shifts must start at 3:00 PM, 4:00 PM, 12:00 AM, or 1:00 AM, to be considered shift work, except when the project owner mandates special hours of work in the job specifications, in which case those hours may be considered shift work.
- When such hours are mandated by the project owner, a shift that begins before midnight on Friday and ends on Saturday morning, or that begins at or after 8:00 PM on Sunday and ends on Monday morning may be paid at the shift differential rate.
- Shifts shall receive an additional \$3.00 per hour.

OVERTIME:

- Hours in excess of 8 per day, Monday through Friday, or outside of the regular workday that are not shift work, and all hours on Saturdays, shall be paid at time and one-half the hourly rate. All hours on Sundays and holidays shall be paid at double the hourly rate.
- Four 10-hour days may be worked, Monday through Thursday, at straight time, with Friday used as a make-up day for a day lost to inclement weather. If Friday is not a make-up day, all hours on Friday shall be paid at time and one-half the hourly rate.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans' Day, Thanksgiving Day, Christmas Day. Sunday holidays observed the following Monday. Veterans Day may be substituted for the day after Thanksgiving. However, in the trading of Veterans Day for the day after Thanksgiving, if overtime is worked on Veterans Day, it shall be paid at double the hourly rate.

Hazardous Waste Work:

- where Level A, B, or C protection is required: + \$3.00/hr
- other Hazardous Waste site: + \$1.00/hr

Effective Dates:

	03/01/2022		03/01/2023
Rate	Fringe	Total	Total
48.65	34.88	83.53	86.03

CLASSIFICATIONS:

Walking Boss & Superintendent

Effective Dates:

	03/01/2022		03/01/2023
Rate	Fringe	Total	Total
48.35	34.88	83.23	85.73

CLASSIFICATIONS:

Heading Foreman, Shaft Foreman, Rod Foreman, Electrician Foreman, Rigging Foreman

FREE AIR TUNNEL JOBS **Rates Expiration Date :**

Effective Dates:

03/01/2022			03/01/2023
Rate	Fringe	Total	Total
47.85	34.88	82.73	85.23

CLASSIFICATIONS:

Iron Foreman, Caulking Foreman, Form Foreman, Cement Finishing Foreman, Concrete Foreman, Track Foreman, Cleanup Foreman, Grout Foreman

Effective Dates:

03/01/2022			03/01/2023
Rate	Fringe	Total	Total
50.35	34.88	85.23	87.73

CLASSIFICATIONS:

Blaster

Effective Dates:

03/01/2022			03/01/2023
Rate	Fringe	Total	Total
47.30	34.88	82.18	84.68

CLASSIFICATIONS:

Top Labor Foreman

Effective Dates:

03/01/2022			03/01/2023
Rate	Fringe	Total	Total
46.95	34.88	81.83	84.33

CLASSIFICATIONS:

Skilled Men (including Caulker, Powder Carrier, all other skilled men)

Skilled Men (including Miner, Drill Runner, Iron Man, Conveyor Man, Manitenance Man, Safety Miner, Rigger, Block Layer, Cement Finisher, Tod Man)

Effective Dates:

03/01/2022			03/01/2023
Rate	Fringe	Total	Total
46.80	34.88	81.68	84.18

CLASSIFICATIONS:

Semi-Skilled Men (including Bell or Signal Man Top or Bottom, Form Worker & Mover, Concrete Worker, Shaft Man, Tunnel Laborer, Caulker's Helper, all other semi-skilled)

Semi-Skilled Men (including Miner's Helper, Chuck Tender, Track Man, Nipper, Brake Man, Derail Man, Cable Man, Hose Man, Gravel Man, Form Man)

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FREE AIR TUNNEL JOBS Rates Expiration Date :

Effective Dates:

03/01/2022			03/01/2023
Rate	Fringe	Total	Total
46.40	34.88	81.28	83.78

CLASSIFICATIONS:

All Others (including Powder Watchman, Change House Attendant, Top Laborer)

DRILL FOR GROUND WATER SUPPLY **Rates Expiration Date :**

The well driller and/or helper may perform all work relative to the construction, finishing, and servicing of wells, pumps and borings for ground water supply. The present methods of well drilling entailing as they do, many diverse job operations calling for drilling, pump discharge, piping, and the operation of various types of related power equipment, shall all be within the job duties and functions of the well driller and/or helper. In the event that an extension of work should occur beyond water well drilling functions, into the field of general construction work, such extension of work would come under the appropriate rates listed elsewhere in this wage determination.

- For Work Hours, Shift Differentials, Overtime Rates, and Recognized Holidays see the "Operating Engineers" section of this wage determination.

Effective Dates:

07/01/2022

Rate	Fringe	Total
55.97	36.65	92.62

CLASSIFICATIONS:

Driller

Effective Dates:

07/01/2022

Rate	Fringe	Total
49.13	36.65	85.78

CLASSIFICATIONS:

Driller's Helper

OPERATING ENGINEERS MARINE-DREDGING **Rates Expiration Date :**

NOTE: These wage rates only apply to dredging and other marine construction activities occurring in navigable waters and their tributaries.

Boat crews carrying explosive material (dynamite, pourfex, and other similar materials) shall be paid at 120% of the hourly wage rate for hours engaged in handling of said materials. Employees required to possess a Hazardous Material Certification as a condition of employment shall be compensated at 120% of the hourly wage rate.

OVERTIME:

Hours in excess of 40 per week, and all hours on Saturdays and Sundays, shall be paid at time and one-half the hourly rate. All hours on holidays shall be paid at double the hourly rate.

RECOGNIZED HOLIDAYS: New Year's Day, Martin Luther King Day, Good Friday, Memorial Day, July 4th, Labor Day, Veterans Day, Thanksgiving Day, Christmas Day. Sunday holidays observed the following Monday.

Effective Dates:

10/18/2021			10/01/2022	10/01/2023
Rate	Fringe	Total	Total	Total
42.66	14.01	56.67	58.48	60.48

CLASSIFICATIONS:

Lead Dredgerman, Operator, Leverman

Licensed Tug Operator (over 1000 HP)

Effective Dates:

10/18/2021			10/01/2022	10/01/2023
Rate	Fringe	Total	Total	Total
36.89	13.66	50.55	52.18	53.93

CLASSIFICATIONS:

Derrick Operator, Spider/Spill Barge Operator

Engineer, Electrician, Chief Welder, Chief Mate

Fill Placer, Operator II

Licensed Boat Operator

Maintenance Engineer

Effective Dates:

10/18/2021			10/01/2022	10/01/2023
Rate	Fringe	Total	Total	Total
34.73	13.53	48.26	49.82	51.47

CLASSIFICATIONS:

Certified Welder

OPERATING ENGINEERS MARINE-DREDGING **Rates Expiration Date :**

Effective Dates:

10/18/2021			10/01/2022	10/01/2023
Rate	Fringe	Total	Total	Total
33.78	13.18	46.96	48.53	50.14

CLASSIFICATIONS:

Mate, Drag Barge Operator, Steward, Assistant Fill Placer

Welder

Effective Dates:

10/18/2021			10/01/2022	10/01/2023
Rate	Fringe	Total	Total	Total
32.69	13.11	45.80	47.34	48.91

CLASSIFICATIONS:

Boat Operator

Effective Dates:

10/18/2021			10/01/2022	10/01/2023
Rate	Fringe	Total	Total	Total
27.16	12.58	39.74	41.30	42.63

CLASSIFICATIONS:

Shoreman, Deckhand, Rodman, Scowman

Effective Dates:

10/18/2021			10/01/2022	10/01/2023
Rate	Fringe	Total	Total	Total
38.02	13.73	51.75	53.41	55.20

CLASSIFICATIONS:

Crane Operator

MICROSURFACING/SLURRY SEAL Rates Expiration Date :

THESE RATES APPLY IN THE FOLLOWING COUNTIES ONLY:

Atlantic, Burlington, Camden, Cape May, Cumberland, Gloucester, Mercer, Ocean, Salem

IN ALL OTHER COUNTIES use the Heavy and General Laborers - North "Slurry Seal Laborer" rates.

SHIFT DIFFERENTIALS:

Any shift starting at 3:30 PM or later shall receive an additional \$0.35/hr

OVERTIME:

Hours in excess of 8 per day or 40 per week shall be paid at time and one-half the hourly rate. All hours on holidays shall be paid at double the hourly rate.

RECOGNIZED HOLIDAYS: New Year's Day, Washington's Birthday, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans' Day, Thanksgiving Day, Christmas Day.

Effective Dates:

03/01/2017

Rate	Fringe	Total
36.50	21.27	57.77

CLASSIFICATIONS:

Foreman

Effective Dates:

03/01/2017

Rate	Fringe	Total
33.80	21.27	55.07

CLASSIFICATIONS:

Box man

Effective Dates:

03/01/2017

Rate	Fringe	Total
31.75	21.27	53.02

CLASSIFICATIONS:

Microsurface/Slurry Preparation

Effective Dates:

03/01/2017

Rate	Fringe	Total
31.75	21.27	53.02

CLASSIFICATIONS:

Squeegee man

TERRITORY
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NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
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MICROSURFACING/SLURRY SEAL Rates Expiration Date :

Effective Dates:

03/01/2017

Rate	Fringe	Total
30.30	21.27	51.57

CLASSIFICATIONS:

Cleaner, Taper

ASPHALT LABORERS - SOUTH Rates Expiration Date :

"THESE RATES APPLY IN THE FOLLOWING COUNTIES ONLY: Atlantic, Burlington, Camden, Cape May, Cumberland, Gloucester, Mercer, Ocean, Salem

{For apprentice rates refer to "Laborer - Heavy & General" apprentice rates in any county rate package}

The regular workday consists of 8 hours, starting at 7:00 AM or 8:00 AM.

SHIFT DIFFERENTIALS:

- Shifts must start at 3:00 PM, 4:00 PM, 12:00 AM, or 1:00 AM, to be considered shift work, except when the project owner mandates special hours of work in the job specifications, in which case those hours may be considered shift work.
- When such hours are mandated by the project owner, a shift that begins before midnight on Friday and ends on Saturday morning, or that begins at or after 8:00 PM on Sunday and ends on Monday morning may be paid at the shift differential rate.
- Shifts shall receive an additional \$3.00 per hour.

OVERTIME:

- Hours in excess of 8 per day, Monday through Friday, or outside of the regular workday that are not shift work, and all hours on Saturdays, shall be paid at time and one-half the hourly rate. All hours on Sundays and holidays shall be paid at double the hourly rate.
- Four 10-hour days may be worked, Monday through Thursday, at straight time, with Friday used as a make-up day for a day lost to inclement weather. If Friday is not a make-up day, all hours on Friday shall be paid at time and one-half the hourly rate.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans' Day, Thanksgiving Day, Christmas Day. Sunday holidays observed the following Monday. Veterans Day may be substituted for the day after Thanksgiving. However, in the trading of Veterans Day for the day after Thanksgiving, if overtime is worked on Veterans Day, it shall be paid at double the hourly rate.

Hazardous Waste Work:

- where Level A, B, or C protection is required: + \$5.00/hr
- other Hazardous Waste site: + \$1.00/hr

FOR TIDE WORK (pertains to tidal water): A contractor can start their job according to tide schedules (tide schedules are the various high and low tides related to this work) providing the eight (8) hour shift is completed between the hours of 5:00 AM and 6:30 PM.

Effective Dates:

	03/01/2022		03/01/2023
Rate	Fringe	Total	Total
49.15	34.88	84.03	87.53

CLASSIFICATIONS:

Paving Foreman

Effective Dates:

	03/01/2022		03/01/2023
Rate	Fringe	Total	Total
46.70	34.88	81.58	84.08

CLASSIFICATIONS:

Head Raker

Effective Dates:

	03/01/2022		03/01/2023
Rate	Fringe	Total	Total
46.85	34.88	81.73	84.23

CLASSIFICATIONS:

Screedman

ASPHALT LABORERS - SOUTH **Rates Expiration Date :**

Effective Dates:

03/01/2022			03/01/2023
Rate	Fringe	Total	Total
46.30	34.88	81.18	83.68

CLASSIFICATIONS:

Tampers, Smoothers, Kettlemen,
Painters, Shovelers, Roller Boys

Effective Dates:

03/01/2022			03/01/2023
Rate	Fringe	Total	Total
46.40	34.88	81.28	83.78

CLASSIFICATIONS:

Milling Controller

Effective Dates:

03/01/2022			03/01/2023
Rate	Fringe	Total	Total
46.60	34.88	81.48	83.98

CLASSIFICATIONS:

Traffic Control Coordinator

Effective Dates:

03/01/2022			03/01/2023
Rate	Fringe	Total	Total
46.55	34.88	81.43	83.93

CLASSIFICATIONS:

Raker, Luteman

TEST BORING PRELIMINARY TO CONSTRUCTION-NORTH **Rates Expiration Date :**

THESE RATES APPLY IN THE FOLLOWING COUNTIES ONLY:
Bergen, Essex, Hudson, Middlesex, Morris, Passaic, Somerset, Union

SHIFT DIFFERENTIAL:

Employees on a shift other than between the hours of 8:00 AM and 5:00 PM shall receive an additional \$2.00 per hour.

OVERTIME:

Hours in excess of 8 per day, Monday through Friday, and all hours on Saturday shall be paid at time and one-half the regular rate. All hours on Sundays and holidays shall be paid at double the regular rate.

RECOGNIZED HOLIDAYS: New Year's Day, Memorial Day, July 4th, Labor Day, Thanksgiving Day, and Christmas Day. Sunday holidays observed the following Monday.

Hazardous Waste Pay (for Levels A, B, and C): an additional 15% of the hourly rate, per hour.

A newly hired Helper with no experience in the industry shall be paid as follows:

- 1st year on the job - 70% of Helper wage rate
- 2nd year on the job - 80% of Helper wage rate
- 3rd year on the job - 90% of Helper wage rate
- All helpers receive full fringe benefit rate.

Effective Dates:

10/18/2021			10/18/2022
Rate	Fringe	Total	Total
33.47	30.70	64.17	65.92

CLASSIFICATIONS:

Helper (4th year helper)

Effective Dates:

10/18/2021			10/18/2022
Rate	Fringe	Total	Total
42.54	30.70	73.24	75.24

CLASSIFICATIONS:

Driller

Effective Dates:

10/18/2021			10/18/2022
Rate	Fringe	Total	Total
48.58	30.70	79.28	81.28

CLASSIFICATIONS:

Foreman

HEAVY & GENERAL LABORERS - NORTH **Rates Expiration Date :**

THESE RATES APPLY IN THE FOLLOWING COUNTIES ONLY:

Bergen, Essex, Hudson, Hunterdon, Middlesex, Monmouth, Morris, Passaic, Somerset, Sussex, Union, Warren

{For apprentice rates refer to "Laborer - Heavy & General" apprentice rates in any county rate package}

The regular workday consists of 8 hours, starting at 7:00 AM or 8:00 AM.

SHIFT DIFFERENTIALS:

- Shifts must start at 3:00 PM, 4:00 PM, 12:00 AM, or 1:00 AM, to be considered shift work, except when the project owner mandates special hours of work in the job specifications, in which case those hours may be considered shift work.
- When such hours are mandated by the project owner, a shift that begins before midnight on Friday and ends on Saturday morning, or that begins at or after 8:00 PM on Sunday and ends on Monday morning may be paid at the shift differential rate.
- Shifts shall receive an additional \$3.00 per hour.

FOR TIDE WORK (pertains to tidal water): A contractor can start their job according to tide schedules (tide schedules are the various high and low tides related to this work) providing the eight (8) hour shift is completed between the hours of 5:00 AM and 6:30 PM.

OVERTIME:

- Hours in excess of 8 per day, Monday through Friday, or outside of the regular workday that are not shift work, and all hours on Saturdays, shall be paid at time and one-half the hourly rate. All hours on Sundays and holidays shall be paid at double the hourly rate.
- Four 10-hour days may be worked, Monday through Thursday, at straight time, with Friday used as a make-up day for a day lost to inclement weather. If Friday is not a make-up day, all hours on Friday shall be paid at time and one-half the hourly rate.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans' Day, Thanksgiving Day, Christmas Day. Sunday holidays observed the following Monday. Veterans Day may be substituted for the day after Thanksgiving. However, in the trading of Veterans Day for the day after Thanksgiving, if overtime is worked on Veterans Day, it shall be paid at double the hourly rate.

Hazardous Waste Work:

- where Level A, B, or C protection is required: + \$5.00/hr
- other Hazardous Waste site: + \$1.00/hr

Effective Dates:

	03/01/2022		03/01/2023
Rate	Fringe	Total	Total
45.90	34.88	80.78	83.28

CLASSIFICATIONS:

"D" Rate:

basic, landscape, asphalt, slurry seal, or railroad track laborer; utility meter installer; flagman; salamander tender; pitman; dumpman; rakers or tampers on cold patch work; wrappers or coaters of pipe; waterproofer; timberman; wagon drill or drill master helper; powder carrier; magazine tender; signal man; power buggy operator; tree cutter; operator of basic power tools

Effective Dates:

	03/01/2022		03/01/2023
Rate	Fringe	Total	Total
46.60	34.88	81.48	83.98

CLASSIFICATIONS:

"C" Rate:

pipe layer; laser man; conduit or duct line layer; operator of jack hammer, chipping hammer, pavement breaker, concrete cutter, asphalt cutter, sheet hammer, or walk-behind saw cutter; sandblaster; acetylene cutting or burning; wagon drill, directional drill, or hydraulic drill operator; drill master; core driller; traffic control coordinator; asphalt raker or lute man

HEAVY & GENERAL LABORERS - NORTH **Rates Expiration Date :**

Effective Dates:

03/01/2022			03/01/2023
Rate	Fringe	Total	Total
46.85	34.88	81.73	84.23

CLASSIFICATIONS:

"B" Rate:

concrete finisher; setter of brick or stone pavers; stone cutter; form setter; manhole, catch basin, or inlet builder; asphalt screedman; rammer; hardscaping; gunite nozzle man

Effective Dates:

03/01/2022			03/01/2023
Rate	Fringe	Total	Total
50.40	34.88	85.28	87.78

CLASSIFICATIONS:

"A" Rate:

blaster

Effective Dates:

03/01/2022			03/01/2023
Rate	Fringe	Total	Total
49.15	34.88	84.03	87.53

CLASSIFICATIONS:

"FOREMAN" Rate:

labor foreman, asphalt foreman, drill foreman, pipe foreman, grade foreman, finisher foreman, concrete foreman

Effective Dates:

03/01/2022			03/01/2023
Rate	Fringe	Total	Total
50.15	34.88	85.03	88.53

CLASSIFICATIONS:

"GENERAL FOREMAN" Rate

HEAVY & GENERAL LABORERS - SOUTH **Rates Expiration Date :**

THESE RATES APPLY IN THE FOLLOWING COUNTIES ONLY:

Atlantic, Burlington, Camden, Cape May, Cumberland, Gloucester, Mercer, Ocean, Salem

{For apprentice rates refer to "Laborer - Heavy & General" apprentice rates in any county rate package}

The regular workday consists of 8 hours, starting at 7:00 AM or 8:00 AM.

SHIFT DIFFERENTIALS:

- Shifts must start at 3:00 PM, 4:00 PM, 12:00 AM, or 1:00 AM, to be considered shift work, except when the project owner mandates special hours of work in the job specifications, in which case those hours may be considered shift work.
- When such hours are mandated by the project owner, a shift that begins before midnight on Friday and ends on Saturday morning, or that begins at or after 8:00 PM on Sunday and ends on Monday morning may be paid at the shift differential rate.
- Shifts shall receive an additional \$3.00 per hour.

FOR TIDE WORK (pertains to tidal water): A contractor can start their job according to tide schedules (tide schedules are the various high and low tides related to this work) providing the eight (8) hour shift is completed between the hours of 5:00 AM and 6:30 PM.

OVERTIME:

- Hours in excess of 8 per day, Monday through Friday, or outside of the regular workday that are not shift work, and all hours on Saturdays, shall be paid at time and one-half the hourly rate. All hours on Sundays and holidays shall be paid at double the hourly rate.
- Four 10-hour days may be worked, Monday through Thursday, at straight time, with Friday used as a make-up day for a day lost to inclement weather. If Friday is not a make-up day, all hours on Friday shall be paid at time and one-half the hourly rate.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans' Day, Thanksgiving Day, Christmas Day. Sunday holidays observed the following Monday. Veterans Day may be substituted for the day after Thanksgiving. However, in the trading of Veterans Day for the day after Thanksgiving, if overtime is worked on Veterans Day, it shall be paid at double the hourly rate.

Hazardous Waste Work:

- where Level A, B, or C protection is required: + \$5.00/hr
- other Hazardous Waste site: + \$1.00/hr

Effective Dates:

	03/01/2022		03/01/2023
Rate	Fringe	Total	Total
45.90	34.88	80.78	83.28

CLASSIFICATIONS:

basic, landscape, or railroad track laborer; utility meter installer; flagman; salamander tender; pitman; dumpman; rakers or tampers on cold patch work; wrappers or coaters of pipe; waterproofers; tree cutter, timberman

Effective Dates:

	03/01/2022		03/01/2023
Rate	Fringe	Total	Total
45.90	34.88	80.78	83.28

CLASSIFICATIONS:

wagon drill or drill master helper; powder carrier; magazine tender; signal man

HEAVY & GENERAL LABORERS - SOUTH **Rates Expiration Date :**

Effective Dates:

03/01/2022			03/01/2023
Rate	Fringe	Total	Total
46.60	34.88	81.48	83.98

CLASSIFICATIONS:

pipe layer; laser man; conduit or duct line layer; operator of jack hammer, chipping hammer, pavement breaker, concrete cutter, asphalt cutter, sheet hammer, or walk-behind saw cutter; sandblaster; acetylene cutting or burning

Effective Dates:

03/01/2022			03/01/2023
Rate	Fringe	Total	Total
46.60	34.88	81.48	83.98

CLASSIFICATIONS:

wagon or directional drill operator; drill master

Effective Dates:

03/01/2022			03/01/2023
Rate	Fringe	Total	Total
50.40	34.88	85.28	87.78

CLASSIFICATIONS:

blaster

Effective Dates:

03/01/2022			03/01/2023
Rate	Fringe	Total	Total
49.15	34.88	84.03	87.53

CLASSIFICATIONS:

labor foreman, drill foreman, pipe foreman, grade foreman, finisher foreman, concrete foreman

Effective Dates:

03/01/2022			03/01/2023
Rate	Fringe	Total	Total
50.15	34.88	85.03	88.53

CLASSIFICATIONS:

general foreman

TERRITORY
ENTIRE STATE

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION

HEAVY & GENERAL LABORERS - SOUTH Rates Expiration Date :

Effective Dates:

03/01/2022			03/01/2023
Rate	Fringe	Total	Total
46.85	34.88	81.73	84.23

CLASSIFICATIONS:

concrete finisher; setter of brick or stone pavers; stone cutter; form setter; manhole, catch basin, or inlet builder; rammer; gunite nozzle man

PIPELINE - MAINLINE TRANSMISSION Rates Expiration Date :

These rates apply to the following: welding on Transportation Mainline pipe lines (cross-country pipe lines, or any segments thereof, transporting coal, gas, oil, water or other transportable materials, vapors or liquids, including portions of such pipe lines within private property boundaries up to the final metering station or connection - the point where a valve, consumer connection, or town border station divides mainline transmission lines or higher pressure lateral and branch lines from lower pressure distribution systems).

PER DIEM PAYMENT:

In addition to the total wage rate paid for each craft, the following per diem (per day) amounts must also be paid - Pipeline Journeyman: \$80.50; Pipeline Journeyman Welder: \$140.50; and Pipeline Helper: \$64.50. Note: in order to receive the per diem payment an employee must work a minimum of 8 hours in a 24 hour period.

NOTES:

- Journeymen employed as "stringer bead" welders and journeymen who are regularly employed as "hot-pass" welders shall receive \$1.00 per hour more than other journeymen.
- Welders running "stringer bead" or "hot-pass" on "cutouts" or "tie-ins" on a production basis shall be paid \$1.00 per hour above the journeymen rate.
- Whenever a welder helper is employed using a power buffer or power grinder immediately behind the stringer bead and/or hot-pass welders, and the pipe gang is set on a production basis, the helper shall be paid \$2.00 per hour above the helper rate.
- If back welding is performed inside a pipe under either or both of the following conditions, the welder engaged in the welding will receive \$3.00 per hour above the regular rate for the job only for the days on which such back welding is performed:
 - The employer elects, as a regular procedure, to back weld each line-up. This condition is not intended to apply to occasional back welding performed by the pipe gang to repair a bead, to rectify a "high-lo" condition or wall thickness, etc.
 - A welder is required to back weld a completed weld behind the firing line.
- If the welder helper is required to go inside the pipe for the purpose of brushing, buffing and grinding the weld, they shall receive a wage rate \$1.00 per hour above the regular helper rate for the days involved.
- Welders working on "hot work" shall be paid \$2.00 per hour above the regular rate for each day engaged in such work. "Hot work" is defined as work on lines in service where there is the danger of fire or explosion.

The regular workday shall be 8 hours, between 8:00 AM and 4:30 PM.

OVERTIME:

Hours in excess of 8 per day, and all hours on Sundays shall be paid at time and one-half the regular rate, inclusive of benefits. All hours on holidays shall be paid at double the regular rate, inclusive of benefits.

RECOGNIZED HOLIDAYS: New Year's Day, July 4th, Labor Day, Thanksgiving Day, and Christmas Day. Sunday holidays observed the following Monday.

Effective Dates:

06/01/2022

Rate	Fringe	Total
55.34	34.65	89.99

CLASSIFICATIONS:

Pipeline Journeyman Welder

TERRITORY
ENTIRE STATE

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION

PIPELINE - MAINLINE TRANSMISSION Rates Expiration Date :

Effective Dates:

06/01/2022

Rate	Fringe	Total
55.34	34.65	89.99

CLASSIFICATIONS:

Pipeline Journeyman

Effective Dates:

06/01/2022

Rate	Fringe	Total
33.84	24.27	58.11

CLASSIFICATIONS:

Pipeline Helper

PIPELINE - GAS DISTRIBUTION **Rates Expiration Date :**

These rates apply to the following: welding on gas line distribution systems (that portion of the gas distribution system placed in streets, roads, subways, tunnels, viaducts, highways and easements which serves the users of gas).

SHIFT DIFFERENTIALS:

An "irregular" shift may start any time from 5:00 PM to 12:00 AM, Monday through Friday, and shall receive an additional 15% of the regular rate per hour, inclusive of benefits.

OVERTIME:

Hours in excess of forty per week, and all hours on Saturdays shall be paid at time and one-half the regular rate, inclusive of benefits. All hours on Sundays and holidays shall be paid at double the regular rate, inclusive of benefits.

RECOGNIZED HOLIDAYS: New Year's Day, Memorial Day, July 4th, Labor Day, Thanksgiving Day, and Christmas Day. Sunday holidays observed the following Monday.

Effective Dates:

11/09/2021			11/01/2022
Rate	Fringe	Total	Total
62.50	28.73	91.23	93.73

CLASSIFICATIONS:

Pipeline Journeyman Welder

Effective Dates:

11/09/2021			11/01/2022
Rate	Fringe	Total	Total
62.50	28.73	91.23	93.73

CLASSIFICATIONS:

Pipeline Journeyman

Effective Dates:

11/09/2021			11/01/2022
Rate	Fringe	Total	Total
39.96	21.05	61.01	62.68

CLASSIFICATIONS:

Pipeline Helper

ASPHALT LABORERS- NORTH **Rates Expiration Date :**

THESE RATES APPLY IN THE FOLLOWING COUNTIES ONLY:

Bergen, Essex, Hudson, Hunterdon, Middlesex, Monmouth, Morris, Passaic, Somerset, Sussex, Union, Warren

{For apprentice rates refer to "Laborer - Heavy & General" apprentice rates in any county rate package}

The regular workday consists of 8 hours, starting at 7:00 AM or 8:00 AM.

SHIFT DIFFERENTIALS:

- Shifts must start at 3:00 PM, 4:00 PM, 12:00 AM, or 1:00 AM, to be considered shift work, except when the project owner mandates special hours of work in the job specifications, in which case those hours may be considered shift work.
- When such hours are mandated by the project owner, a shift that begins before midnight on Friday and ends on Saturday morning, or that begins at or after 8:00 PM on Sunday and ends on Monday morning may be paid at the shift differential rate.
- Shifts shall receive an additional \$3.00 per hour.

OVERTIME:

- Hours in excess of 8 per day, Monday through Friday, or outside of the regular workday that are not shift work, and all hours on Saturdays, shall be paid at time and one-half the hourly rate. All hours on Sundays and holidays shall be paid at double the hourly rate.
- Four 10-hour days may be worked, Monday through Thursday, at straight time, with Friday used as a make-up day for a day lost to inclement weather. If Friday is not a make-up day, all hours on Friday shall be paid at time and one-half the hourly rate.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans' Day, Thanksgiving Day, Christmas Day. Sunday holidays observed the following Monday. Veterans Day may be substituted for the day after Thanksgiving. However, in the trading of Veterans Day for the day after Thanksgiving, if overtime is worked on Veterans Day, it shall be paid at double the hourly rate.

Hazardous Waste Work:

- where Level A, B, or C protection is required: + \$5.00/hr
- other Hazardous Waste site: + \$1.00/hr

FOR TIDE WORK (pertains to tidal water): A contractor can start their job according to tide schedules (tide schedules are the various high and low tides related to this work) providing the eight (8) hour shift is completed between the hours of 5:00 AM and 6:30 PM.

Effective Dates:

	03/01/2022		03/01/2023
Rate	Fringe	Total	Total
49.15	34.88	84.03	87.53

CLASSIFICATIONS:

Asphalt Foreman

Effective Dates:

	03/01/2022		03/01/2023
Rate	Fringe	Total	Total
46.85	34.88	81.73	84.23

CLASSIFICATIONS:

Asphalt Screedman

Effective Dates:

	03/01/2022		03/01/2023
Rate	Fringe	Total	Total
46.60	34.88	81.48	83.98

CLASSIFICATIONS:

Asphalt Raker or Lute Man

TERRITORY
ENTIRE STATE

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION

ASPHALT LABORERS- NORTH Rates Expiration Date :

Effective Dates:

03/01/2022			03/01/2023
Rate	Fringe	Total	Total
45.90	34.88	80.78	83.28

CLASSIFICATIONS:

Asphalt Laborer

ELECTRICIAN- UTILITY WORK (NORTH) **Rates Expiration Date :**

Electrician-Utility Work (North)

(For apprentice rates refer to Electrician-Utility Work (North) in any county rate package).

These rates apply to work contracted for by the following utility companies:

Public Service Electric & Gas Co. of NJ, GPU Energy, Borough of Madison Electric Department, Sussex Rural Electric Cooperative, Rockland Utilities, and Butler Municipal Electric Co.

These rates do not apply to work on substations or switching stations.

For Utility work contracted for by a utility company other than those listed above or those listed under "Electrician-Utility Work (South), see the "Outside Commercial Rates" for the county in which the jobsite is located.

* FOR OUTSIDE COMMERCIAL RATES PLEASE SEE COUNTY RATES

The regular workday is 8 hours, between 6:00 AM and 6:00 PM.

FOR EMERGENCY WORK ONLY: (emergency work is defined as work caused by storm, catastrophe, act of god, and circumstances beyond the control of the employer)-all hours of work shall be paid at double the hourly rate.

SHIFT DIFFERENTIALS:

Shift work must run for a minimum of 5 consecutive workdays.

2nd shift (between the hours of 4:30 PM and 1:00 AM): 8 hours of work + 17.3% of the regular rate, inclusive of benefits.

3rd shift (between the hours of 12:30 AM and 9:00 AM): 8 hours of work + 31.4% of the regular rate per hour, inclusive of benefits.

OVERTIME:

Hours in excess of 8 per day, or before or after the regular workday Monday through Friday, that is not shift work, and all hours on Saturday shall be paid at time and one-half the regular rate, inclusive of benefits. All hours on Sundays and holidays shall be paid at double the hourly rate, inclusive of benefits.

Four 10-hour days may worked, at straight time, between 6:00 AM and 6:00 PM, Monday through Thursday.

RECOGNIZED HOLIDAYS:

New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans' Day, Thanksgiving Day and Christmas Day, or day on which they are legally observed.

Effective Dates:

	12/05/2021		12/04/2022	12/03/2023	12/01/2024
Rate	Fringe	Total	Total	Total	Total
59.18	40.83	100.01	103.20	106.36	109.56

CLASSIFICATIONS:

Chief Lineman

Effective Dates:

	12/05/2021		12/04/2022	12/03/2023	12/01/2024
Rate	Fringe	Total	Total	Total	Total
55.83	38.52	94.35	97.36	100.35	103.36

CLASSIFICATIONS:

Journeyman Lineman

ELECTRICIAN- UTILITY WORK (NORTH) **Rates Expiration Date :**

Effective Dates:

	12/05/2021		12/04/2022	12/03/2023	12/01/2024
Rate	Fringe	Total	Total	Total	Total
55.83	38.52	94.35	97.36	100.35	103.36

CLASSIFICATIONS:

Special License Operator

Effective Dates:

	12/05/2021		12/04/2022	12/03/2023	12/01/2024
Rate	Fringe	Total	Total	Total	Total
55.27	38.13	93.40	96.38	99.35	102.32

CLASSIFICATIONS:

Transit Man

Effective Dates:

	12/05/2021		12/04/2022	12/03/2023	12/01/2024
Rate	Fringe	Total	Total	Total	Total
53.60	36.98	90.58	93.47	96.33	99.21

CLASSIFICATIONS:

Line Equipment Operator

Effective Dates:

	12/05/2021		12/04/2022	12/03/2023	12/01/2024
Rate	Fringe	Total	Total	Total	Total
46.90	32.36	79.26	81.77	84.29	86.81

CLASSIFICATIONS:

Dynamite Man

Effective Dates:

	12/05/2021		12/04/2022	12/03/2023	12/01/2024
Rate	Fringe	Total	Total	Total	Total
69.79	48.15	117.94	121.69	125.44	129.20

CLASSIFICATIONS:

General Foreman

Effective Dates:

	12/05/2021		12/04/2022	12/03/2023	12/01/2024
Rate	Fringe	Total	Total	Total	Total
64.20	44.29	108.49	111.96	115.41	118.85

CLASSIFICATIONS:

Assistant General Foreman

ELECTRICIAN- UTILITY WORK (NORTH) **Rates Expiration Date :**

Effective Dates:

12/05/2021			12/04/2022	12/03/2023	12/01/2024
Rate	Fringe	Total	Total	Total	Total
62.53	43.14	105.67	109.03	112.40	115.76

CLASSIFICATIONS:

Line Foreman

Effective Dates:

12/05/2021			12/04/2022	12/03/2023	12/01/2024
Rate	Fringe	Total	Total	Total	Total
45.22	31.20	76.42	78.85	81.28	83.72

CLASSIFICATIONS:

Street Light Mechanical Leader

Effective Dates:

12/05/2021			12/04/2022	12/03/2023	12/01/2024
Rate	Fringe	Total	Total	Total	Total
42.99	29.66	72.65	74.96	77.26	79.58

CLASSIFICATIONS:

Groundman Winch Operator

Effective Dates:

12/05/2021			12/04/2022	12/03/2023	12/01/2024
Rate	Fringe	Total	Total	Total	Total
42.99	29.66	72.65	74.96	77.26	79.58

CLASSIFICATIONS:

Groundman Truck Operator

Effective Dates:

12/05/2021			12/04/2022	12/03/2023	12/01/2024
Rate	Fringe	Total	Total	Total	Total
42.43	29.27	71.70	73.98	76.26	78.55

CLASSIFICATIONS:

Street Light Mechanic

Effective Dates:

12/05/2021			12/04/2022	12/03/2023	12/01/2024
Rate	Fringe	Total	Total	Total	Total
42.43	29.27	71.70	73.98	76.26	78.55

CLASSIFICATIONS:

Line Equipment Mechanic

ELECTRICIAN- UTILITY WORK (NORTH) **Rates Expiration Date :**

Effective Dates:

12/05/2021			12/04/2022	12/03/2023	12/01/2024
Rate	Fringe	Total	Total	Total	Total
36.29	25.04	61.33	63.29	65.23	67.17

CLASSIFICATIONS:

Groundman 2nd Year

Effective Dates:

12/05/2021			12/04/2022	12/03/2023	12/01/2024
Rate	Fringe	Total	Total	Total	Total
33.50	23.11	56.61	58.42	60.21	62.02

CLASSIFICATIONS:

Groundman 1st Year

Effective Dates:

12/05/2021			12/04/2022	12/03/2023	12/01/2024
Rate	Fringe	Total	Total	Total	Total
55.27	38.13	93.40	96.38	99.35	102.32

CLASSIFICATIONS:

Line Equipment Foreman

ELECTRICIAN- UTILITY WORK (SOUTH) Rates Expiration Date :

Electrician-Utility Work (South)

(For apprentice rates refer to Electrician-Utility Work (South) in any county rate package).

These rates apply to work contracted for by the following utility company:

Atlantic City Electric.

These rates do not apply to work on substations or switching stations.

For utility work contracted for by a utility company other than the one listed above or those listed under "Electrician-Utility Work (North), see the "Outside Commercial Rates" for the county in which the jobsite is located.

* FOR OUTSIDE COMMERCIAL RATES PLEASE SEE COUNTY RATES

The regular workday is 8 hours, between 7:00 AM and 4:30 PM.

FOR EMERGENCY WORK ONLY: (emergency work is defined as work caused by storm, catastrophe, act of god, and circumstances beyond the control of the employer)- all hours of work shall be paid at double the hourly rate.

SHIFT DIFFERENTIALS:

Shift work must run for a minimum of 5 consecutive workdays.

When two (2) or three (3) shifts are worked the following shall apply:

1st shift (between the hours of 8:00 AM and 4:30 PM)

2nd shift (between the hours of 4:30 PM and 12:30 AM): 8 hours of work + 10% of the regular rate of pay for 7.5 hours worked.

3rd shift (between the hours of 12:30 AM and 8:00 AM): 8 hours of work + 15% of the regular rate of pay for 7 hours worked.

OVERTIME:

Hours in excess of 8 per day, or before or after the regular workday Monday through Friday, that is not shift work, and all hours on Saturday shall be paid at time and one-half the regular rate. All hours on Sundays and Holidays shall be paid double the hourly rate.

Four 10-hour days may be worked, at straight time, between 6:00 AM and 6:00 PM, Monday through Thursday with Friday used as a make-up day.

RECOGNIZED HOLIDAYS:

New Year's Day, Memorial Day, July 4th, Labor Day, Veterans' Day, Thanksgiving Day and Christmas Day or on days celebrated.

WORKING RULES:

There shall be a Foreman in charge of each work crew. No crews are to exceed twelve (12) men, including Foremen.

There shall be a General Foreman designated for transmission work when three (3) or more crews are on the same job and for distribution work where there are more than twenty (20) employees on site.

A small job crew shall consist of five (5) or less employees, one (1) of the Journeyman Linemen in the crew shall be designated as a Small Job Foreman.

Work performed from ladders and/or mechanical lift equipment shall be the work of Linemen and/or Apprentices.

On new construction, fitting and framing poles, towers or structures may be done by Journeymen and/or Apprentices. Groundmen may assist, but may not perform any work which would be performed by Linemen if assembled in the air.

There shall be a Journeyman Lineman in each pole setting, erection, grounding, wire and cable-pulling crew of more than three (3) men.

Effective Dates:

12/05/2021

Rate	Fringe	Total
65.28	53.00	118.28

CLASSIFICATIONS:

General Foreman

ELECTRICIAN- UTILITY WORK (SOUTH) **Rates Expiration Date :**

Effective Dates:

12/05/2021

Rate	Fringe	Total
58.14	48.74	106.88

CLASSIFICATIONS:

Foreman

Effective Dates:

12/05/2021

Rate	Fringe	Total
55.08	46.90	101.98

CLASSIFICATIONS:

Small Job Foreman

Effective Dates:

12/05/2021

Rate	Fringe	Total
51.00	44.47	95.47

CLASSIFICATIONS:

Heavy Equipment Operator

Effective Dates:

12/05/2021

Rate	Fringe	Total
51.00	44.47	95.47

CLASSIFICATIONS:

Cable Splicer

Effective Dates:

12/05/2021

Rate	Fringe	Total
51.00	44.47	95.47

CLASSIFICATIONS:

Journeyman Lineman

Effective Dates:

12/05/2021

Rate	Fringe	Total
51.00	44.47	95.47

CLASSIFICATIONS:

Journeyman Welder

ELECTRICIAN- UTILITY WORK (SOUTH) Rates Expiration Date :

Effective Dates:

12/05/2021

Rate	Fringe	Total
51.00	44.47	95.47

CLASSIFICATIONS:

Journeyman Painter

Effective Dates:

12/05/2021

Rate	Fringe	Total
40.80	38.24	79.04

CLASSIFICATIONS:

Light Equipment Operator

Effective Dates:

12/05/2021

Rate	Fringe	Total
35.70	35.33	71.03

CLASSIFICATIONS:

Groundman Truck Driver

Effective Dates:

12/05/2021

Rate	Fringe	Total
33.15	33.82	66.97

CLASSIFICATIONS:

Groundman 3rd Year

Effective Dates:

12/05/2021

Rate	Fringe	Total
30.60	32.30	62.90

CLASSIFICATIONS:

Groundman 2nd Year

Effective Dates:

12/05/2021

Rate	Fringe	Total
28.05	30.77	58.82

CLASSIFICATIONS:

Groundman 1st Year

TERRITORY
ENTIRE STATE

NEW JERSEY DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
PREVAILING WAGE RATE DETERMINATION

ELECTRICIAN- UTILITY WORK (SOUTH) Rates Expiration Date :

Effective Dates:

12/05/2021

Rate	Fringe	Total
21.78	27.02	48.80

CLASSIFICATIONS:

Flagman

HEAVY & GENERAL LABORERS- NEW TRANS HUDSON TUNNELS Rates Expiration Date :

****THESE RATES APPLY TO CONSTRUCTION ON NEW TRANS HUDSON TUNNELS ONLY****

{For apprentice rates refer to "Laborer - Heavy & General" apprentice rates in any county rate package}

The regular workday consists of 8 hours, starting at 7:00 AM or 8:00 AM.

SHIFT DIFFERENTIALS:

- Shifts must start at 3:00 PM, 4:00 PM, 12:00 AM, or 1:00 AM, to be considered shift work, except when the project owner mandates special hours of work in the job specifications, in which case those hours may be considered shift work.
- When such hours are mandated by the project owner, a shift that begins before midnight on Friday and ends on Saturday morning, or that begins at or after 8:00 PM on Sunday and ends on Monday morning may be paid at the shift differential rate.
- Shifts shall receive an additional \$3.00 per hour.

OVERTIME:

- Hours in excess of 8 per day, Monday through Friday, or outside of the regular workday that are not shift work, and all hours on Saturdays, shall be paid at time and one-half the hourly rate. All hours on Sundays and holidays shall be paid at double the hourly rate.
- Four 10-hour days may be worked, Monday through Thursday, at straight time, with Friday used as a make-up day for a day lost to inclement weather. If Friday is not a make-up day, all hours on Friday shall be paid at time and one-half the hourly rate.

RECOGNIZED HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, July 4th, Labor Day, Presidential Election Day, Veterans' Day, Thanksgiving Day, Christmas Day. Sunday holidays observed the following Monday. Veterans Day may be substituted for the day after Thanksgiving. However, in the trading of Veterans Day for the day after Thanksgiving, if overtime is worked on Veterans Day, it shall be paid at double the hourly rate.

Hazardous Waste Work:

- where Level A, B, or C protection is required: + \$3.00/hr
- other Hazardous Waste site: + \$1.00/hr

Effective Dates:

	03/01/2022		03/01/2023
Rate	Fringe	Total	Total
72.98	34.88	107.86	111.19

CLASSIFICATIONS:

Walking Boss & Superintendent

Effective Dates:

	03/01/2022		03/01/2023
Rate	Fringe	Total	Total
72.53	34.88	107.41	110.74

CLASSIFICATIONS:

Heading Foreman, Shaft Foreman, Rod Foreman, Electrical Foreman, Rigging Foreman

HEAVY & GENERAL LABORERS- NEW TRANS HUDSON TUNNELS **Rates Expiration Date :**

Effective Dates:

	03/01/2022		03/01/2023
Rate	Fringe	Total	Total
71.78	34.88	106.66	109.99

CLASSIFICATIONS:

Iron Foreman, Caulking Foreman, Form Foreman, Cement Finishing Foreman, Concrete Foreman, Track Foreman, Clean-up Foreman, Grout Foreman

Effective Dates:

	03/01/2022		03/01/2023
Rate	Fringe	Total	Total
75.53	34.88	110.41	113.74

CLASSIFICATIONS:

Blaster

Effective Dates:

	03/01/2022		03/01/2023
Rate	Fringe	Total	Total
70.95	34.88	105.83	109.16

CLASSIFICATIONS:

Top Labor Foreman

Effective Dates:

	03/01/2022		03/01/2023
Rate	Fringe	Total	Total
70.43	34.88	105.31	108.64

CLASSIFICATIONS:

Skilled Men (including Caulker, Powder Carrier, all other skilled men)

Skilled Men (including Miner, Drill Runner, Iron Man, Conveyor Man, Maintenance Man, Safety Miner, Rigger, Block Layer, Cement Finisher, Rod Man)

Effective Dates:

	03/01/2022		03/01/2023
Rate	Fringe	Total	Total
70.20	34.88	105.08	108.41

CLASSIFICATIONS:

Semi-Skilled Men (including Bell or Signal Man top or bottom, Form Worker & Mover, Concrete Worker, Shaft Man, Tunnel Laborer, Caulker's Helper, all other semi-skilled)

Semi-Skilled Men (including Miner's Helper, Chuck Tender, Track Man, Nipper, Brake Man, Derail Man, Cable Man, Hose Man, Gravel Man, Form Man)

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HEAVY & GENERAL LABORERS- NEW TRANS HUDSON TUNNELS Rates Expiration Date :

Effective Dates:

03/01/2022			03/01/2023
Rate	Fringe	Total	Total
69.60	34.88	104.48	107.81

CLASSIFICATIONS:

All others (including Powder Watchman, Change House Attendant, Top Laborer, Job Steward)

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SECTION 011000 - SUMMARY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:

1. Project information.
2. Work covered by Contract Documents.
3. Access to site.
4. Coordination with occupants.
5. Work restrictions.
6. Specification and drawing conventions.

1.3 PROJECT INFORMATION

- A. Project Identification: Burrowes Mansion Structural Repairs and Electrical Upgrades.
1. Project Location: 94 Main Street, Matawan, NJ 07747.
- B. Owner: Borough of Matawan, 201 Broad Street, Matawan, NJ 07747.
1. Owner's Representative: Scott Carew, Borough of Matawan, 201 Broad Street, Matawan, NJ 07747, (732) 566-3898.
- C. Architect: HMR Architects, 821 Alexander Road, Suite 115, Princeton, NJ 08540. (609) 452-1070. Architect's contact: Kurt Leasure, leasure@hmr-architects.com.

1.4 WORK COVERED BY CONTRACT DOCUMENTS

- A. The Work of Project is defined by the Contract Documents and consists of the following:
1. Excavate and provide vapor barrier new slab at the basement, Rooms 001 and 002
 2. Excavate and provide vapor barrier new slab at the basement, Rooms 003 (ALT #2)
 3. Provide perimeter drainage below slab
 4. Repoint interior basement walls
 5. Provide new footings, steel columns and steel beams for first floor framing
 6. Provide supplemental steel framing at floor of Room 203 (ALT #1)
 7. Miscellaneous rough carpentry

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8. Plaster cutting and patching
9. New electrical service
10. Remove existing wiring and provide new code compliant wiring throughout
11. Provide new lighting throughout
12. Provide select outdoor lighting
13. Provide emergency exit lighting and signage

B. Type of Contract:

1. Project will be constructed under a single prime contract.

1.5 ACCESS TO SITE

- A. General: Contractor shall have limited use of Project site for construction operations as indicated on Drawings by the Contract limits and as indicated by requirements of this Section.
- B. Use of Site: Limit use of Project site to areas within the Contract limits indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.
 1. Limits: Confine construction operations to area indicated on drawings.
- C. Condition of Existing Building: Maintain portions of existing building affected by construction operations in a weathertight condition throughout construction period. Repair damage caused by construction operations.

1.6 COORDINATION WITH OCCUPANTS

- A. Partial Owner Occupancy: Owner will occupy portions of the premises during entire construction period, with the exception of areas under construction. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's operations. Maintain existing exits unless otherwise indicated.
 1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from Owner and authorities having jurisdiction.

1.7 WORK RESTRICTIONS

- A. Work Restrictions, General: Comply with restrictions on construction operations.
 1. Comply with limitations on use of public streets and with other requirements of authorities having jurisdiction.
- B. On-Site Work Hours: Limit work to working hours of 7 a.m. to 5 p.m., Monday through Friday, unless otherwise indicated.
 1. Weekend Hours: Not permitted.

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2. Hours for Utility Shutdowns: Coordinate with Owner.
- C. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated:
 1. Notify Owner not less than two days in advance of proposed utility interruptions.
 2. Obtain Owner's written permission before proceeding with utility interruptions.
 3. Maintain uninterrupted electrical service to the building to ensure fire alarm and sump-pump operation.
- D. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to Owner occupancy with Owner.
 1. Notify Owner not less than two days in advance of proposed disruptive operations.
 2. Obtain Owner's written permission before proceeding with disruptive operations.
- E. Nonsmoking Building: Smoking is not permitted within the building or within 25 feet (8 m) of entrances, operable windows, or outdoor-air intakes.
- F. Controlled Substances: Use of tobacco products and other controlled substances within the existing building is not permitted.

1.8 SPECIFICATION AND DRAWING CONVENTIONS

- A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
 1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
 2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.
- B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.
- C. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:
 1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
 2. Abbreviations: Materials and products are identified by abbreviations published as part of the U.S. National CAD Standard and as scheduled on Drawings.
 3. Keynoting: Materials and products are identified by reference keynotes referencing Specification Section numbers found in this Project Manual.

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PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000

Structural Repairs & Electrical Upgrades
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SECTION 011200 - SPECIAL CONDITIONS

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of contract, including Instruction to Bidders, General Conditions, Special Conditions and other Division 1 Specification sections, apply to the work in this section.

1.2 GENERAL

- A. The Special Conditions are intended to compliment, modify, and/or amend the General Conditions. Where the same subject is covered in both sections, in the absence of conflict they shall jointly apply; where conflict occurs the Supplementary Conditions shall govern.
- B. The work of this project will be performed upon premises that have been entered in the State and National Registers of Historic Places and designated a National Historic Landmark. Extreme care shall be exercised in the performance of the work of this Contract and every precaution shall be taken to protect these premises from damages of any kind.

1.3 CORRELATION OF DOCUMENTS

- A. In case of any discrepancy between the various Drawings, or between various parts of the Specifications or between Drawings and Specifications, the matter shall immediately be submitted to the A/E, and for Contractual purposes, the most expensive condition shall apply.

1.4 PRE-BID SITE VISIT

- A. Pre-bid Site Meeting: All bidders must visit the building prior to submission of a bid in order to familiarize themselves with the existing conditions. Date of Pre-bid Site visit is indicated in "Notice to Bidders".

1.5 GUARANTEE

- A. Upon completion of the work and before applying for final acceptance, Contractor shall furnish a written guarantee stating that the work complies with the provisions of codes listed herein and the local enforcing authorities, and that it will be free from defects of material and workmanship for Two (2) years from the date of final payment. Guarantee shall further state that the Contractor will, at his own expense, repair and/or replace any of his material and work which may become defective during the time of the guarantee, together with other work damaged as a consequence of such defects.
 - 1. Other Guarantees: Refer to other specification sections for guarantees required by manufacturers for work of other Sections.

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1.6 PERMITS, FEES AND NOTICES:

- A. Successful Bidder shall obtain Construction permits from the municipality. Cost of all permits, fees and notices shall be paid for by the Contractor.

1.7 COOPERATION WITH OWNER ON BUILDING AND SITE USAGE (See also 1.13)

- A. Use of Site: Limit use of premises to work in areas indicated. Do not disturb portions of site beyond areas which the Work is indicated.
 - 1. Limits: Confine construction operations to immediate areas of the work.
- B. Use of Existing Building: Owner will have limited occupancy occupy site and existing building during entire construction period and operations. Contractor shall conduct his operations in such a way as to minimize interference with Owner's operations. Allow for Owner occupancy of site and for use by the public as follows:
 - 1. Maintain existing building in a weathertight condition throughout construction period. Repair damage caused by construction operations. Protect building and its occupants during construction period.
 - 2. Contractor shall be responsible for coordinating and cooperating with the Owner regarding deliveries and the use of existing roads and parking areas on the site.
 - 3. In coordination with the Architect and Owner, the Contractor shall prepare a project schedule and corresponding schematic floor plan(s) for approval by Architect and Owner prior to start of work indicating portions of Work to be completed during particular periods and how Museum schedule will be accommodated.
- C. Driveways and Entrances: Keep driveways and entrances serving premises clear and available to Owner, Owner's employees, building users, and emergency vehicles at all times. Pedestrian access shall be maintained to selected entrance doors at all times.
 - 1. Do not use driveways and entrances for parking or storage of materials. Schedule deliveries to minimize use of driveways and entrances. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on site.
- D. Any damage to the existing buildings from heavy equipment, striking the building or any other damage to any part of the premises shall be repaired at the expense of the Contractor.
- E. The Contractor shall exercise extreme caution so as not to damage or crack existing pavement at the Site. The Contractor shall exercise care in selection of equipment to be employed so that said equipment will not damage existing pavement either in transportation to site or in use.
- F. Radios shall not be permitted on the site.
- G. Smoking shall not be permitted in or near the building. Contractors shall abide by the smoking policy for the historic site established by the Owner.

1.8 PROTECTION OF WORK AND OWNER'S PREMISES DURING CONSTRUCTION

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- A. The Contractor shall be responsible for the protection of all work and materials from theft or vandalism during construction. Damaged work and stolen items or materials will be repaired and replaced by the Contractor at his own expense. The Contractor shall be responsible for the protection of the Owner's premises during construction operations. Contractor shall take all necessary precautions to prevent damage to all walls, flooring surfaces, roofing, windows, painted surfaces, and plantings. The Contractor shall be responsible for repairing or replacing all damaged items or surfaces.
- B. Loss by Theft or Other Causes: The Contractor shall protect against loss of material, work or equipment by theft, vandalism or other causes and take such precautions as he sees fit to protect himself against loss therefrom. Limited building contents will remain within the building during construction. Contractor shall take all steps to insure maintenance of security and security systems at the existing building.
- C. Weather Protection: The Contractor shall provide adequate protection of the building, work and materials against damage by elements, rain, snow, wind, storms, frost, or heat. At the end of each day's work, the Contractor shall protect with temporary covering building and new work liable to damage.
- D. The Contractor shall be responsible for dust control and other protection measures during completion of the work. Production of dust must be minimized, and captured by the tool producing dust. Any generated dust shall be confined to the Project Limits. The furnishings in the structure are significant. Surface removal of construction dust that has traveled outside the Project Limits is NOT an acceptable method of dust control.
- E. In addition to dust control, the Contractor is responsible for all impact protection of historic features and surfaces in the path of travel to the work area and within the work area. Items requiring impact protect include, but are not limited to: floors, stair treads and risers, handrails at stairs and stair openings, walls and ceilings adjacent to work, lighting fixtures, glazing, bathroom fixtures and furnishings. Floor covering shall consist of masonite sheets over rosin paper with duct taped joints throughout all work areas. A protection plan and shop drawings are required to be submitted to the Architect for review and approval prior to the start of work.
- F. The scope of work does not include general painting of interior surfaces after completion of electrical work as a means of cleaning-up marred surfaces resulting from the work. Contractor is responsible for protecting finished surfaces from hand-prints, dings, smudges and other dirt deposits resulting from the Work. Repainting to repair such damage will be at the Contractors expense.
- G. Furnishings and other objects in the house, as determined necessary by the Owner in consultation with the Architect and Contractor, shall be removed by the Owner prior to the start of work.
- H. Fire Protection for Welding and Other Heat-Generating Work
 - 1. A fire watch protocol shall be established for the completion of welding and other heat generating activities. The immediate work area shall be monitored by the fire watch for a period of 2 hours after the completion of heat generating activities. Fire extinguishers shall be kept on site in the immediate area of heat generating activities for the duration of the work and fire watch.

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1.9 USE OF FACILITIES DURING CONSTRUCTION

- A. It is called to the attention of all contractors and trades, and such other person or persons supplying any material or labor entering into the construction directly or indirectly, that other persons may be on or about the site throughout the course of the construction work. Particular caution and attention is required to maintain and assure the safety and ease of access for all persons involved in their daily operations and use of the site.
- B. Although certain minimum safety provisions are included in the Contract Documents, these provisions shall not be considered complete and do not minimize or override the Contractor's responsibilities in this regard. These provisions are included only to assure a minimum level of protection, which may have to be supplemented by the Contractor as deemed necessary as construction progresses.

1.10 EXISTING CONDITIONS

- A. All the dimensions shown on the Drawings and pertaining to existing conditions shall be assumed and approximate. Obtain and verify all required measurements for constructing new work at the site.

1.11 SITE CONDITIONS

- A. Contractor's Staging Area and Parking: Contractor shall prepare for the construction and maintenance of an area reserved for the Contractor's equipment, materials, trailers and other such items belonging to him. The location of this area will be outlined at the kick-off meeting.
- B. Access to the construction area shall be as directed by the Owner. The locations of these areas will be outlined at the mandatory pre-bid conference. The Contractor and his suppliers shall adhere strictly, to the access arrangements as directed by the Owner.

1.12 SITE PROTECTION

- A. Landscape Protection: This project requires the preservation and protection of existing plantings and lawns at the site. The Contractor shall provide replacement plantings, of the same size and species, of any plant materials accidentally damaged during the execution of the work.

1.13 PERMITS

- A. At his own expense the Contractor shall take out and maintain all necessary permits from the State, County, Municipality or other public authorities, shall give all notices required by law; and shall post all bonds and pay all fees and charges incident to the due and lawful completion of the contract.

1.14 TIME OF COMPLETION

- A. The Contractor agrees to start the work herein contracted for within ten (10) days from the date of the Owner's Notice To Proceed to the Contractor directing him to proceed with the work. The

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schedule to complete the work contracted for, from the date of the Proceed Order, shall be as follows :

One Hundred and Eighty (180) Calendar Days

B. It is hereby understood and mutually agreed by and between the Contractor and the Owner that the date of commencement, rate of progress and the above time of completion of the work are essential conditions of this Contract. It is further understood and agreed that the work covered under this Contract shall be started on the date specified in the Owner's notice to proceed.

1. The owner shall accept or reject bids within twenty days of bid date.

C. The Contractor agrees that said work shall be prosecuted regularly, diligently, and un-interrupted at such rate of progress as will insure full completion there of within the time specified. It is expressly understood and agreed, by and between the Contractor and the Owner, that the time for the completion of work described herein is a reasonable time for completion of the same, taking into consideration the average climatic range and usual industrial conditions prevailing in this locality.

1.15 CHANGES IN THE WORK

A. When a Change Order is authorized on a time and material basis or a lump sum basis the payment for such work, when performed by the Contractor, shall include the cost for labor and materials to which may be added a total of 15% for overhead and profit. When such work is performed by a sub-contractor to the Contractor the payment shall include the cost for labor and materials to which the subcontractor may add a total of 10% for overhead and profit. In this case, the Contractor may add a total of 10% overhead and profit figure to the subcontractor's total price.

1.16 PREVAILING WAGES

A. Requirements of Law

Attention is called specifically to the requirements of Chapter 10, Title 34, Revised Statutes providing, as a condition of this contract, the establishment of an eight-hour working day for laborers, workmen and mechanics, and requiring payment of prevailing rates of wages.

The Contractor will be required to comply with the provisions of the New Jersey Prevailing Wage Act, Chapter 150 of the Laws of 1963 (N.J.S. 34:11-56.25 et. seq.), setting forth requirements for the payment of prevailing wages and for the proper documentation of such payments.

B. Wage Rate Determination on File

Copies of the Act cited above and of the New Jersey Department of Labor and Industry Wage Rate Determination for this project are attached.

C. Wage Rates, A Condition of Contract

Bidders should familiarize themselves with the above-cited Act and the particular wage rate determination for his project since they will be attached to and made a condition of the contract to be executed for this project.

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In the event that it is determined that any workmen employed by the Contractor or any subcontractor covered by this contract are paid less than the required wage rates, the Owner may terminate the Contractor's right to proceed with the work or such part of the work as to which there has been a failure to pay required wages and prosecute the work to completion or otherwise. The Contractor and Sureties shall be liable to the Owner for any excess costs occasioned thereto.

Prior to final acceptance of the project by the Owner, the Contractor shall file with the Engineer a sworn written statement certifying to the amounts that are due or owing to any and all workmen for wages due on account of this project. The statements shall set forth the names of the persons whose wages are unpaid and amount due each.

1.17 CLEANUP

- A. Daily Cleaning: The Contractor shall keep all work areas, pedestrian walks and parking areas free of debris at all times. Broom cleaning of these areas is required on a daily basis to remove construction debris.
- B. Periodic Cleaning: The Contractor shall at all times during the progress of the work keep the site free from accumulation of waste matter or rubbish and shall confine his apparatus, materials and operations of his workmen to limits prescribed by law or by the Contract Limit Lines, except as the latter may be extended with the Owner.
- C. Final Clean-up: Upon completion of the work covered by the Contract, and/or particular portions of the work, the Contractor shall leave the completed project, or area, ready for use and occupancy without the need for further cleaning of any kind and with all work in the new condition and perfect order. In addition, upon completion of the work, all rubbish and unused materials belonging to the Contractor or used under his direction during construction (or impairing the use or appearance of the property) shall be removed from the property and the Contractor shall restore such areas affected by his work to their original condition. In the event of his failure to do so, the same shall be removed by the Owner at the expense of the Contractor and he and his surety shall be liable thereafter.
- D. All pavements shall be free of dirt, sealants, oil stains, etc. The Contractor shall power wash all pavements after the completion of the work.

END OF SECTION 011200

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SECTION 012100 - ALLOWANCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements governing allowances.
 - 1. Certain items are specified in the Contract Documents by allowances. Allowances have been established in lieu of additional requirements and to defer selection of actual materials and equipment to a later date when direction will be provided to Contractor. If necessary, additional requirements will be issued by Change Order.
- B. Types of allowances include the following:
 - 1. Lump-sum allowances.
- C. Related Requirements:
 - 1. Section 012200 "Unit Prices" for procedures for using unit prices.

1.3 SELECTION AND PURCHASE

- A. At the earliest practical date after award of the Contract, advise Architect of the date when final selection and purchase of each product or system described by an allowance must be completed to avoid delaying the Work.
- B. At Architect's request, obtain proposals for each allowance for use in making final selections. Include recommendations that are relevant to performing the Work.
- C. Purchase products and systems selected by Architect from the designated supplier.

1.4 ACTION SUBMITTALS

- A. Submit proposals for purchase of products or systems included in allowances, in the form specified for Change Orders.

1.5 INFORMATIONAL SUBMITTALS

- A. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.

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- B. Submit time sheets and other documentation to show labor time and cost for installation of allowance items that include installation as part of the allowance.
- C. Coordinate and process submittals for allowance items in same manner as for other portions of the Work.

1.6 COORDINATION

- A. Coordinate allowance items with other portions of the Work. Furnish templates as required to coordinate installation.

1.7 LUMP-SUM ALLOWANCES

- A. Allowance shall include cost to Contractor of specific products and materials selected by Architect under allowance and shall include taxes, freight and delivery to Project site.
- B. Unless otherwise indicated, Contractor's costs for receiving and handling at Project site, labor, installation, overhead and profit, and similar costs related to products and materials selected by Architect under allowance shall be included as part of the Contract Sum and not part of the allowance.
- C. Unused Materials: Return unused materials purchased under an allowance to manufacturer or supplier for credit to Owner, after installation has been completed and accepted.
 - 1. If requested by Architect, retain and prepare unused material for storage by Owner. Deliver unused material to Owner's storage space as directed.

1.8 ADJUSTMENT OF ALLOWANCES

- A. Allowance Adjustment: To adjust allowance amounts, prepare a Change Order proposal based on the difference between purchase amount and the allowance, multiplied by final measurement of work-in-place where applicable. If applicable, include reasonable allowances for cutting losses, tolerances, mixing wastes, normal product imperfections, and similar margins.
 - 1. Include installation costs in purchase amount only where indicated as part of the allowance.
 - 2. If requested, prepare explanation and documentation to substantiate distribution of overhead costs and other margins claimed.
 - 3. Submit substantiation of a change in scope of work, if any, claimed in Change Orders related to unit-cost allowances.
 - 4. Owner reserves the right to establish the quantity of work-in-place by independent quantity survey, measure, or count.
- B. Submit claims for increased costs because of a change in scope or nature of the allowance described in the Contract Documents, whether for the purchase order amount or Contractor's handling, labor, installation, overhead, and profit.
 - 1. Do not include Contractor's or subcontractor's indirect expense in the Change Order cost amount unless it is clearly shown that the nature or extent of work has changed from what could have been foreseen from information in the Contract Documents.

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2. No change to Contractor's indirect expense is permitted for selection of higher- or lower-priced materials or systems of the same scope and nature as originally indicated.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine products covered by an allowance promptly on delivery for damage or defects. Return damaged or defective products to manufacturer for replacement.

3.2 PREPARATION

- A. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related work.

3.3 SCHEDULE OF ALLOWANCES

- A. Allowance No. 3: Lump-Sum Allowance: Include the sum of **\$2,500** for additional wood flooring restoration work beyond work identified in documents as specified in Section 096400 "Wood Flooring."
 1. This allowance includes material cost receiving, handling, and installation and Contractor overhead and profit.
- B. Allowance No. 4: Lump-Sum Allowance: Include the sum of **\$5,000** for additional rough carpentry work beyond work identified in documents as specified in Section 061000 "Rough Carpentry".
 1. This allowance includes material cost receiving, handling, and installation and Contractor overhead and profit.

END OF SECTION 012100

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SECTION 012200 - UNIT PRICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for unit prices.
- B. Related Requirements:
 - 1. Section 012100 "Allowances"

1.3 DEFINITIONS

- A. Unit price is a price per unit of measurement for materials, equipment, or services, or a portion of the Work, added to or deducted from the Contract Sum by appropriate modification, if the scope of Work or estimated quantities of Work required by the Contract Documents are increased or decreased.

1.4 PROCEDURES

- A. Unit prices include all necessary material, plus cost for delivery, installation, insurance, applicable taxes, overhead, and profit.
- B. Measurement and Payment: See individual Specification Sections for work that requires establishment of unit prices. Methods of measurement and payment for unit prices are specified in those Sections.
- C. Owner reserves the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and to have this work measured, at Owner's expense, by an independent surveyor acceptable to Contractor.
- D. List of Unit Prices: A schedule of unit prices is included in Part 3. Specification Sections referenced in the schedule contain requirements for materials described under each unit price.

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PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF UNIT PRICES

A. Unit Price No. 1 – Plaster patching:

1. Description: Plaster patching.
2. Unit of Measurement: square foot.

BASE BID NOTE: All cutting and patching of plaster required for the installation of all electrical equipment, wiring and devices is the responsibility of the Contractor and is included in the base bid.

This Unit Price shall be used in the event that additional cutting and patching is requested by the owner outside the scope of the electrical installation.

A. Unit Price No. 2 – Wood Flooring Replacement:

1. Description: Wood Flooring.
2. Unit of Measurement: square foot.

This Unit Price shall be used in the event that wood flooring is required in addition to the extent shown in the contract drawings.

END OF SECTION 012200

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SECTION 012300 - ALTERNATES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for alternates.

1.2 DEFINITIONS

- A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the Bidding Requirements that may be added to or deducted from the base bid amount if Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.
1. Alternates described in this Section are part of the Work only if enumerated in the Agreement.
 2. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternate into the Work. No other adjustments are made to the Contract Sum.

1.3 PROCEDURES

- A. Coordination: Modify or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.
1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.
- B. Notification: Immediately following award of the Contract, notify each party involved, in writing, of the status of each alternate. Indicate if alternates have been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated modifications to alternates.
- C. Execute accepted alternates under the same conditions as other work of the Contract.
- D. Schedule: A schedule of alternates is included at the end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the work described under each alternate.

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PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF ALTERNATES

- A. **Alternate No. 1 (ADD):** All work related to the structural upgrades at the floor of Room 203, including removal and re-plastering of ceiling at Room 102. New ceiling fixtures at Room 102 are included in the Base Bid.
- B. **Alternate No. 2 (ADD):** All work related to the installation of a new slab in Room 003. New footing and column at beam repair are included in the Base Bid

END OF SECTION 012300

SECTION 012500 - SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for substitutions.
- B. Related Requirements:
 - 1. Section 012100 "Allowances" for products selected under an allowance.
 - 2. Section 012300 "Alternates" for products selected under an alternate.

1.3 DEFINITIONS

- A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents.
 - 1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.
 - 2. Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required to meet other Project requirements but may offer advantage to Contractor or Owner.

1.4 ACTION SUBMITTALS

- A. Substitution Requests: Submit documentation identifying product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
 - 1. Substitution Request Form: Use form acceptable to Architect.
 - 2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
 - a. Statement indicating why specified product or fabrication or installation method cannot be provided, if applicable.
 - b. Coordination of information, including a list of changes or revisions needed to other parts of the Work and to construction performed by Owner and separate contractors that will be necessary to accommodate proposed substitution.

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- c. Detailed comparison of significant qualities of proposed substitutions with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes, such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
 - d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
 - e. Samples, where applicable or requested.
 - f. Certificates and qualification data, where applicable or requested.
 - g. List of similar installations for completed projects, with project names and addresses as well as names and addresses of architects and owners.
 - h. Material test reports from a qualified testing agency, indicating and interpreting test results for compliance with requirements indicated.
 - i. Research reports evidencing compliance with building code in effect for Project, from ICC-ES.
 - j. Detailed comparison of Contractor's construction schedule using proposed substitutions with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
 - k. Cost information, including a proposal of change, if any, in the Contract Sum.
 - l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents, except as indicated in substitution request, is compatible with related materials and is appropriate for applications indicated.
 - m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
3. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within seven days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.
- a. Forms of Acceptance: Change Order, Construction Change Directive, or Architect's Supplemental Instructions for minor changes in the Work.
 - b. Use product specified if Architect does not issue a decision on use of a proposed substitution within time allocated.

1.5 QUALITY ASSURANCE

- A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

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1.6 PROCEDURES

- A. Coordination: Revise or adjust affected work as necessary to integrate work of the approved substitutions.

1.7 SUBSTITUTIONS

- A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than 15 days prior to time required for preparation and review of related submittals.

1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:

- a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
- b. Substitution request is fully documented and properly submitted.
- c. Requested substitution will not adversely affect Contractor's construction schedule.
- d. Requested substitution has received necessary approvals of authorities having jurisdiction.
- e. Requested substitution is compatible with other portions of the Work.
- f. Requested substitution has been coordinated with other portions of the Work.
- g. Requested substitution provides specified warranty.
- h. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

- B. Substitutions for Convenience: Not allowed unless otherwise indicated.

- C. Substitutions for Convenience: Architect will consider requests for substitution if received within 60 days after the Notice to Proceed. Requests received after that time may be considered or rejected at discretion of Architect.

1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:

- a. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Architect for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
- b. Requested substitution does not require extensive revisions to the Contract Documents.
- c. Requested substitution is consistent with the Contract Documents and will produce indicated results.

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- d. Substitution request is fully documented and properly submitted.
- e. Requested substitution will not adversely affect Contractor's construction schedule.
- f. Requested substitution has received necessary approvals of authorities having jurisdiction.
- g. Requested substitution is compatible with other portions of the Work.
- h. Requested substitution has been coordinated with other portions of the Work.
- i. Requested substitution provides specified warranty.
- j. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012500

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SECTION 012600 - CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for handling and processing Contract modifications.
- B. Related Requirements:
 - 1. Section 012500 "Substitution Procedures" for administrative procedures for handling requests for substitutions made after the Contract award.
 - 2. Section 013100 "Project Management and Coordination" for requirements for forms for contract modifications provided as part of web-based Project management software.

1.3 MINOR CHANGES IN THE WORK

- A. Architect will issue supplemental instructions authorizing minor changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, on AIA Document G710.

1.4 PROPOSAL REQUESTS

- A. Owner-Initiated Proposal Requests: Architect will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.
 - 1. Work Change Proposal Requests issued by Architect are not instructions either to stop work in progress or to execute the proposed change.
 - 2. Within time specified in Proposal Request or 20 days, when not otherwise specified, after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.
 - a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
 - b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 - c. Include costs of labor and supervision directly attributable to the change.

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- d. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
 - e. Quotation Form: Use forms acceptable to Architect.
- B. Contractor-Initiated Proposals: If latent or changed conditions require modifications to the Contract, Contractor may initiate a claim by submitting a request for a change to Architect.
- 1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
 - 2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
 - 3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 - 4. Include costs of labor and supervision directly attributable to the change.
 - 5. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
 - 6. Comply with requirements in Section 012500 "Substitution Procedures" if the proposed change requires substitution of one product or system for product or system specified.
 - 7. Proposal Request Form: Use form acceptable to Architect.

1.5 ADMINISTRATIVE CHANGE ORDERS

- A. Allowance Adjustment: See Section 012100 "Allowances" for administrative procedures for preparation of Change Order Proposal for adjusting the Contract Sum to reflect actual costs of allowances.
- B. Unit-Price Adjustment: See Section 012200 "Unit Prices" for administrative procedures for preparation of Change Order Proposal for adjusting the Contract Sum to reflect measured scope of unit-price work.

1.6 CHANGE ORDER PROCEDURES

- A. On Owner's approval of a Work Change Proposal Request, Architect will issue a Change Order for signatures of Owner and Contractor on AIA Document G701.

1.7 CONSTRUCTION CHANGE DIRECTIVE

- A. Construction Change Directive: Architect may issue a Construction Change Directive on AIA Document G714. Construction Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.

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1. Construction Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.

- B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.
 1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012600

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SECTION 012900 - PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements necessary to prepare and process Applications for Payment.
- B. Related Requirements:
 - 1. Section 012100 "Allowances" for procedural requirements governing the handling and processing of allowances.
 - 2. Section 012200 "Unit Prices" for administrative requirements governing the use of unit prices.
 - 3. Section 012600 "Contract Modification Procedures" for administrative procedures for handling changes to the Contract.

1.3 DEFINITIONS

- A. Schedule of Values: A statement furnished by Contractor allocating portions of the Contract Sum to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

1.4 SCHEDULE OF VALUES

- A. Coordination: Coordinate preparation of the schedule of values with preparation of Contractor's construction schedule.
 - 1. Coordinate line items in the schedule of values with items required to be indicated as separate activities in Contractor's construction schedule.
 - 2. Submit the schedule of values to Architect at earliest possible date, but no later than seven days before the date scheduled for submittal of initial Applications for Payment.
- B. Format and Content: Use Project Manual table of contents as a guide to establish line items for the schedule of values. Provide at least one line item for each Specification Section.
 - 1. Identification: Include the following Project identification on the schedule of values:
 - a. Project name and location.
 - b. Owner's name.

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- c. Owner's Project number.
 - d. Name of Architect.
 - e. Architect's Project number.
 - f. Contractor's name and address.
 - g. Date of submittal.
2. Arrange schedule of values consistent with format of AIA Document G703.
 3. Arrange the schedule of values in tabular form, with separate columns to indicate the following for each item listed:
 - a. Related Specification Section or division.
 - b. Description of the Work.
 - c. Name of subcontractor.
 - d. Name of manufacturer or fabricator.
 - e. Name of supplier.
 - f. Change Orders (numbers) that affect value.
 - g. Dollar value of the following, as a percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent. Round dollar amounts to whole dollars, with total equal to Contract Sum.
 - 1) Labor.
 - 2) Materials.
 - 3) Equipment.
 4. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Provide multiple line items for principal subcontract amounts in excess of five percent of the Contract Sum.
 5. Provide a separate line item in the schedule of values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
 - a. Differentiate between items stored on-site and items stored off-site.
 6. Allowances: Provide a separate line item in the schedule of values for each allowance. Show line-item value of unit-cost allowances, as a product of the unit cost, multiplied by measured quantity. Use information indicated in the Contract Documents to determine quantities.
 7. Schedule of Values Revisions: Revise the schedule of values when Change Orders or Construction Change Directives result in a change in the Contract Sum. Include at least one separate line item for each Change Order and Construction Change Directive.

1.5 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment following the initial Application for Payment shall be consistent with previous applications and payments, as certified by Architect and paid for by Owner.
- B. Applications for Payment **MUST** be accompanied by monthly progress photographs corresponding to work for which payment is being requested.

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- C. Payment Application Times: The date for each progress payment is indicated in the Owner/Contractor Agreement. The period of construction work covered by each Application for Payment is the period indicated in the Agreement.
1. Submit draft copy of Application for Payment seven days prior to due date for review by Architect.
- D. Application for Payment Forms: Use AIA Document G702 and AIA Document G703 as form for Applications for Payment.
- E. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Architect will return incomplete applications without action.
1. Entries shall match data on the schedule of values and Contractor's construction schedule. Use updated schedules if revisions were made.
 2. Include amounts for work completed following previous Application for Payment, whether or not payment has been received. Include only amounts for work completed at time of Application for Payment.
- F. Stored Materials: Include in Application for Payment amounts applied for materials or equipment purchased or fabricated and stored, but not yet installed. Differentiate between items stored on-site and items stored off-site.
1. Provide certificate of insurance, evidence of transfer of title to Owner, and consent of surety to payment for stored materials.
 2. Provide supporting documentation that verifies amount requested, such as paid invoices. Match amount requested with amounts indicated on documentation; do not include overhead and profit on stored materials.
 3. Provide summary documentation for stored materials indicating the following:
 - a. Value of materials previously stored and remaining stored as of date of previous Applications for Payment.
 - b. Value of previously stored materials put in place after date of previous Application for Payment and on or before date of current Application for Payment.
 - c. Value of materials stored since date of previous Application for Payment and remaining stored as of date of current Application for Payment.
- G. Transmittal: Submit three signed and notarized original copies of each Application for Payment to Architect by a method ensuring receipt within 24 hours. One copy shall include waivers of lien and similar attachments if required.
1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.
- H. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's lien from entities lawfully entitled to file a mechanic's lien arising out of the Contract and related to the Work covered by the payment.

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1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
 2. When an application shows completion of an item, submit conditional final or full waivers.
 3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
 4. Submit final Application for Payment with or preceded by conditional final waivers from every entity involved with performance of the Work covered by the application who is lawfully entitled to a lien.
 5. Waiver Forms: Submit executed waivers of lien on forms acceptable to Owner.
- I. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:
1. List of subcontractors.
 2. Schedule of values.
 3. Contractor's construction schedule (preliminary if not final).
 4. Schedule of unit prices.
 5. Submittal schedule (preliminary if not final).
 6. Copies of building permits.
 7. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
 8. Certificates of insurance and insurance policies.
- J. Application for Payment at Substantial Completion: After Architect issues the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.
1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
 - a. Complete administrative actions, submittals, and Work preceding this application, as described in Section 017700 "Closeout Procedures."
 2. This application shall reflect Certificate(s) of Substantial Completion issued previously for Owner occupancy of designated portions of the Work.
- K. Final Payment Application: After completing Project closeout requirements, submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:
1. Evidence of completion of Project closeout requirements.
 2. Certification of completion of final punch list items.
 3. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
 4. Updated final statement, accounting for final changes to the Contract Sum.
 5. AIA Document G706.
 6. AIA Document G706A.
 7. AIA Document G707.
 8. Waivers and releases.

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PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012900

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SECTION 013100 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative provisions for coordinating construction operations on Project, including, but not limited to, the following:
1. General coordination procedures.
 2. Coordination drawings.
 3. RFIs.
 4. Digital project management procedures.
 5. Web-based Project management software package.
 6. Project meetings.
- B. Related Requirements:
1. Section 017300 "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
 2. Section 017700 "Closeout Procedures" for coordinating closeout of the Contract.

1.3 DEFINITIONS

- A. BIM: Building Information Modeling.
- B. RFI: Request for Information. Request from Owner, Architect, or Contractor seeking information required by or clarifications of the Contract Documents.

1.4 INFORMATIONAL SUBMITTALS

- A. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:
1. Name, address, telephone number, and email address of entity performing subcontract or supplying products.
 2. Number and title of related Specification Section(s) covered by subcontract.
 3. Drawing number and detail references, as appropriate, covered by subcontract.

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- B. Key Personnel Names: Within 15 days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses, cellular telephone numbers, and e-mail addresses. Provide names, addresses, and telephone numbers of individuals assigned as alternates in the absence of individuals assigned to Project.

1.5 GENERAL COORDINATION PROCEDURES

- A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations included in different Sections that depend on each other for proper installation, connection, and operation.
 - 1. Schedule construction operations in sequence required to obtain the best results, where installation of one part of the Work depends on installation of other components, before or after its own installation.
 - 2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
 - 3. Make adequate provisions to accommodate items scheduled for later installation.
- B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.
 - 1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.
- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
 - 1. Preparation of Contractor's construction schedule.
 - 2. Preparation of the schedule of values.
 - 3. Installation and removal of temporary facilities and controls.
 - 4. Delivery and processing of submittals.
 - 5. Progress meetings.
 - 6. Preinstallation conferences.
 - 7. Project closeout activities.
 - 8. Startup and adjustment of systems.

1.6 COORDINATION DRAWINGS

- A. Coordination Drawings, General: Prepare coordination drawings according to requirements in individual Sections, and additionally where installation is not completely indicated on Shop Drawings, where limited space availability necessitates coordination, or if coordination is required to facilitate integration of products and materials fabricated or installed by more than one entity.

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1. Content: Project-specific information, drawn accurately to a scale large enough to indicate and resolve conflicts. Do not base coordination drawings on standard printed data. Include the following information, as applicable:
 - a. Use applicable Drawings as a basis for preparation of coordination drawings. Prepare sections, elevations, and details as needed to describe relationship of various systems and components.
 - b. Coordinate the addition of trade-specific information to coordination drawings in a sequence that best provides for coordination of the information and resolution of conflicts between installed components before submitting for review.
 - c. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.
 - d. Indicate space requirements for routine maintenance and for anticipated replacement of components during the life of the installation.
 - e. Show location and size of access doors required for access to concealed dampers, valves, and other controls.
 - f. Indicate required installation sequences.
 - g. Indicate dimensions shown on Drawings. Specifically note dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternative sketches to Architect indicating proposed resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.

1.7 REQUEST FOR INFORMATION (RFI)

- A. General: Immediately on discovery of the need for additional information, clarification, or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.
 1. Architect will return without response those RFIs submitted to Architect by other entities controlled by Contractor.
 2. Coordinate and submit RFIs in a prompt manner to avoid delays in Contractor's work or work of subcontractors.
- B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:
 1. Project name.
 2. Owner name.
 3. Name of Architect.
 4. Architect's Project number.
 5. Date.
 6. Name of Contractor.
 7. RFI number, numbered sequentially.
 8. RFI subject.
 9. Specification Section number and title and related paragraphs, as appropriate.
 10. Drawing number and detail references, as appropriate.
 11. Field dimensions and conditions, as appropriate.

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12. Contractor's suggested resolution. If Contractor's suggested resolution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
 13. Contractor's signature.
 14. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.
 - a. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.
- C. RFI Forms: AIA Document G716.
1. Attachments shall be electronic files in PDF format.
- D. Architect's Action: Architect will review each RFI, determine action required, and respond. Allow seven days for Architect's response for each RFI. RFIs received by Architect after 1:00 p.m. will be considered as received the following working day.
1. The following Contractor-generated RFIs will be returned without action:
 - a. Requests for approval of submittals.
 - b. Requests for approval of substitutions.
 - c. Requests for approval of Contractor's means and methods.
 - d. Requests for coordination information already indicated in the Contract Documents.
 - e. Requests for adjustments in the Contract Time or the Contract Sum.
 - f. Requests for interpretation of Architect's actions on submittals.
 - g. Incomplete RFIs or inaccurately prepared RFIs.
 2. Architect's action may include a request for additional information, in which case Architect's time for response will date from time of receipt by Architect of additional information.
- E. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number.
1. Project name.
 2. Name and address of Contractor.
 3. Name and address of Architect.
 4. RFI number, including RFIs that were returned without action or withdrawn.
 5. RFI description.
 6. Date the RFI was submitted.
 7. Date Architect's response was received.
 8. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.
 9. Identification of related Field Order, Work Change Directive, and Proposal Request, as appropriate.

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1.8 PROJECT MEETINGS

- A. General: Schedule and conduct meetings and conferences at Project site unless otherwise indicated.
1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times a minimum of seven days prior to meeting.
 2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
 3. Minutes: Entity responsible for conducting meeting will record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Architect, within three days of the meeting.
- B. Preconstruction Conference: Schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner and Architect, but no later than 15 days after execution of the Agreement.
1. Attendees: Authorized representatives of Owner Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 2. Agenda: Discuss items of significance that could affect progress, including the following:
 - a. Tentative construction schedule.
 - b. Critical work sequencing and long lead items.
 - c. Designation of key personnel and their duties.
 - d. Lines of communications.
 - e. Use of web-based Project software.
 - f. Procedures for processing field decisions and Change Orders.
 - g. Procedures for RFIs.
 - h. Procedures for testing and inspecting.
 - i. Procedures for processing Applications for Payment.
 - j. Distribution of the Contract Documents.
 - k. Submittal procedures.
 - l. Preparation of Record Documents.
 - m. Use of the premises and existing building.
 - n. Work restrictions.
 - o. Working hours.
 - p. Owner's occupancy requirements.
 - q. Responsibility for temporary facilities and controls.
 - r. Procedures for disruptions and shutdowns.
 - s. Construction waste management and recycling.
 - t. Parking availability.
 - u. Office, work, and storage areas.
 - v. Equipment deliveries and priorities.
 - w. First aid.
 - x. Security.
 - y. Progress cleaning.
 3. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.

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- C. Preinstallation Conferences: Conduct a preinstallation conference at Project site before each construction activity when required by other Sections and when required for coordination with other construction.
1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Architect of scheduled meeting dates.
 2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
 - a. Contract Documents.
 - b. Options.
 - c. Related RFIs.
 - d. Related Change Orders.
 - e. Purchases.
 - f. Deliveries.
 - g. Submittals.
 - h. Sustainable design requirements.
 - i. Review of mockups.
 - j. Possible conflicts.
 - k. Compatibility requirements.
 - l. Time schedules.
 - m. Weather limitations.
 - n. Manufacturer's written instructions.
 - o. Warranty requirements.
 - p. Compatibility of materials.
 - q. Acceptability of substrates.
 - r. Temporary facilities and controls.
 - s. Space and access limitations.
 - t. Regulations of authorities having jurisdiction.
 - u. Testing and inspecting requirements.
 - v. Installation procedures.
 - w. Coordination with other work.
 - x. Required performance results.
 - y. Protection of adjacent work.
 - z. Protection of construction and personnel.
 3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
 4. Reporting: Distribute minutes of the meeting to each party present and to other parties requiring information.
 5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.
- D. Project Closeout Conference: Schedule and conduct a project closeout conference, at a time convenient to Owner and Architect, but no later than 90 days prior to the scheduled date of Substantial Completion.

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1. Conduct the conference to review requirements and responsibilities related to Project closeout.
 2. Attendees: Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the meeting. Participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
 3. Agenda: Discuss items of significance that could affect or delay Project closeout, including the following:
 - a. Preparation of Record Documents.
 - b. Procedures required prior to inspection for Substantial Completion and for final inspection for acceptance.
 - c. Procedures for completing and archiving web-based Project software site data files.
 - d. Submittal of written warranties.
 - e. Requirements for completing sustainable design documentation.
 - f. Requirements for preparing operations and maintenance data.
 - g. Requirements for delivery of material samples, attic stock, and spare parts.
 - h. Requirements for demonstration and training.
 - i. Preparation of Contractor's punch list.
 - j. Procedures for processing Applications for Payment at Substantial Completion and for final payment.
 - k. Submittal procedures.
 - l. Coordination of separate contracts.
 - m. Owner's partial occupancy requirements.
 - n. Installation of Owner's furniture, fixtures, and equipment.
 - o. Responsibility for removing temporary facilities and controls.
 4. Minutes: Entity conducting meeting will record and distribute meeting minutes.
- E. Progress Meetings: Conduct progress meetings at biweekly intervals, or as require based on construction progress.
1. Coordinate dates of meetings with preparation of payment requests.
 2. Attendees: In addition to representatives of Owner and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
 3. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
 - a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.

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- 1) Review schedule for next period.
4. Minutes: Entity responsible for conducting the meeting will record and distribute the meeting minutes to each party present and to parties requiring information.
 - a. Schedule Updating: Revise Contractor's construction schedule after each progress meeting, where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013100

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SECTION 013233 - PHOTOGRAPHIC DOCUMENTATION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for the following:
 - 1. Preconstruction photographs
 - 2. Periodic construction photographs
 - 3. Final construction photographs
- B. Related Sections:
 - 1. Division 01 Section "Closeout Procedures" for submitting photographic documentation as Project Record Documents at Project closeout.

1.2 INFORMATIONAL SUBMITTALS

- A. Digital Photographs: Submit all image files within seven days of taking photographs.
 - 1. Digital Camera: Minimum sensor resolution of 10 megapixels.
 - 2. Identification: Provide the following information with each image description in file metadata tag:
 - a. Name of Project.
 - b. Name and contact information for photographer.
 - c. Date photograph was taken.
 - d. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
- B. Print Photographs:
 - 1. Format: 8-by-10-inch (203-by-254-mm) smooth-surface matte prints on single-weight commercial-grade photographic paper enclosed back to back in clear plastic sleeves that are punched for standard three-ring binder.
 - 2. Identification: On back of each print, provide an applied label or rubber-stamped impression with the following information:
 - a. Name of Project.
 - b. Name and contact information for photographer.
 - c. Name of Contractor.
 - d. Date photograph was taken if not date stamped by camera.
 - e. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.

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1.3 QUALITY ASSURANCE

- A. Photographer Qualifications: An individual who has been regularly engaged as a professional photographer of construction projects for not less than three years.

1.4 COORDINATION

- A. Auxiliary Services: Cooperate with photographer and provide auxiliary services requested, including access to Project site and use of temporary facilities, including temporary lighting required to produce clear, well-lit photographs.

1.5 USAGE RIGHTS

- A. Obtain and transfer copyright usage rights from photographer to Owner for unlimited reproduction of photographic documentation.

PART 2 - PRODUCTS

2.1 PHOTOGRAPHIC MEDIA

- A. Digital Images: Provide images in JPG format, with minimum size of 8 megapixels.

PART 3 - EXECUTION

3.1 CONSTRUCTION PHOTOGRAPHS

- A. Photographer: Engage a qualified photographer to take construction photographs.
- B. General: Take photographs using the maximum range of depth of field, and that are in focus, to clearly show the Work. Photographs with blurry or out-of-focus areas will not be accepted.
- C. Preconstruction Photographs: Before starting construction, take photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points, as directed by Architect.
 - 1. Digital Photographs:
 - a. Take 50 photographs to show existing conditions of property before starting the Work.
- A. Periodic Construction Photographs: Take 25 photographs monthly, coinciding with the cutoff date associated with each Application for Payment. Select vantage points to show status of construction and progress since last photographs were taken.
 - 1. Format: Digital Photographs

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2. APPLICATIONS FOR PAYMENT MUST BE ACCOMPANIED BY MONTHLY PROGRESS PHOTOGRAPHS CORRESPONDING TO WORK FOR WHICH PAYMENT IS BEING REQUESTED.
- B. Final Completion Construction Photographs: Take 24 color photographs after date of Substantial Completion for submission as Project Record Documents. Architect will inform photographer of desired vantage points.
1. Format: Print Photographs
 2. Submit **two** prints (see requirements of 1.2 B above) of **sixteen (16)** selected photographic views within **fourteen** days of taking photographs.
- C. Additional Photographs: Architect may request photographs in addition to periodic photographs specified. Additional digital photographs are included in the Contract Sum. Additional Print Photographs will be paid for by Change Order and are not included in the Contract Sum.
1. Three days' notice will be given, where feasible.
 2. In emergency situations, take additional photographs within 24 hours of request.
 3. Circumstances that could require additional photographs include, but are not limited to, the following:
 - a. Special events planned at Project site.
 - b. Immediate follow-up when on-site events result in construction damage or losses.
 - c. Photographs to be taken at fabrication locations away from Project site.
 - d. Substantial Completion of a major phase or component of the Work.
 - e. Extra record photographs at time of final acceptance.
 - f. Owner's request for special publicity photographs.

END OF SECTION 013233

SECTION 013300 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:

- 1. Submittal schedule requirements.
- 2. Administrative and procedural requirements for submittals.

- B. Related Requirements:

- 1. Section 012900 "Payment Procedures" for submitting Applications for Payment and the schedule of values.
- 2. Section 013100 "Project Management and Coordination" for submitting coordination drawings and subcontract list and for requirements for web-based Project software.
- 3. Section 013233 "Photographic Documentation" for submitting preconstruction photographs, periodic construction photographs, and Final Completion construction photographs.
- 4. Section 017700 "Closeout Procedures" for submitting closeout submittals and maintenance material submittals.
- 5. Section 017839 "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.

1.3 DEFINITIONS

- A. Action Submittals: Written and graphic information and physical samples that require Architect's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals."
- B. Informational Submittals: Written and graphic information and physical samples that do not require Architect's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as "informational submittals."

1.4 SUBMITTAL SCHEDULE

- A. Submittal Schedule: Submit, as an action submittal, a list of submittals, arranged in chronological order by dates required by construction schedule. Include time required for

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review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Architect and additional time for handling and reviewing submittals required by those corrections.

1. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.
2. Initial Submittal Schedule: Submit concurrently with startup construction schedule. Include submittals required during the first 60 days of construction. List those submittals required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.
3. Final Submittal Schedule: Submit concurrently with the first complete submittal of Contractor's construction schedule.
 - a. Submit revised submittal schedule as required to reflect changes in current status and timing for submittals.
4. Format: Arrange the following information in a tabular format:
 - a. Scheduled date for first submittal.
 - b. Specification Section number and title.
 - c. Submittal Category: Action; informational.
 - d. Name of subcontractor.
 - e. Description of the Work covered.
 - f. Scheduled date for Architect's final release or approval.
 - g. Scheduled dates for purchasing.
 - h. Scheduled date of fabrication.
 - i. Scheduled dates for installation.
 - j. Activity or event number.

1.5 SUBMITTAL FORMATS

A. Submittal Information: Include the following information in each submittal:

1. Project name.
2. Date.
3. Name of Architect.
4. Name of Construction Manager.
5. Name of Contractor.
6. Name of firm or entity that prepared submittal.
7. Names of subcontractor, manufacturer, and supplier.
8. Unique submittal number, including revision identifier. Include Specification Section number with sequential alphanumeric identifier and alphanumeric suffix for resubmittals.
9. Category and type of submittal.
10. Submittal purpose and description.
11. Number and title of Specification Section, with paragraph number and generic name for each of multiple items.
12. Drawing number and detail references, as appropriate.
13. Indication of full or partial submittal.
14. Location(s) where product is to be installed, as appropriate.

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15. Other necessary identification.
16. Remarks.
17. Signature of transmitter.

B. Options: Identify options requiring selection by Architect.

C. Deviations and Additional Information: On each submittal, clearly indicate deviations from requirements in the Contract Documents, including minor variations and limitations; include relevant additional information and revisions, other than those requested by Architect on previous submittals. Indicate by highlighting on each submittal or noting on attached separate sheet.

D. Paper Submittals:

1. Place a permanent label or title block on each submittal item for identification; include name of firm or entity that prepared submittal.
2. Provide a space approximately **4 by 6 inches** on label or beside title block to record Contractor's review and approval markings and action taken by Architect.
3. Action Submittals: Submit three paper copies of each submittal unless otherwise indicated. Architect will return two copies.
4. Informational Submittals: Submit two paper copies of each submittal unless otherwise indicated. Architect will not return copies.
5. Additional Copies: Unless additional copies are required for final submittal, and unless Architect observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.
6. Transmittal for Submittals: Assemble each submittal individually and appropriately for transmittal and handling. Transmit each submittal using AIA Document G810 transmittal form.

E. Electronic Submittals: Prepare submittals as PDF package, incorporating complete information into each PDF file. Name PDF file with submittal number.

F. Submittals Utilizing Web-Based Project Software: Prepare submittals as PDF files or other format indicated by Project management software.

1.6 SUBMITTAL PROCEDURES

A. Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.

1. Email: Prepare submittals as PDF package and transmit to Architect by sending via email. Include PDF transmittal form. Include information in email subject line as requested by Architect.
 - a. Architect will return annotated file. Annotate and retain one copy of file as a digital Project Record Document file.

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2. Web-Based Project Management Software: Prepare submittals in PDF form, and upload to web-based Project management software website. Enter required data in web-based software site to fully identify submittal.
 3. Paper: Prepare submittals in paper form and deliver to Architect.
- B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
 2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
 3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.
 4. Coordinate transmittal of submittals for related parts of the Work specified in different Sections, so processing will not be delayed because of need to review submittals concurrently for coordination.
 - a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
1. Initial Review: Allow 15 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
 2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
 3. Resubmittal Review: Allow 15 days for review of each resubmittal.
 4. Sequential Review: Where sequential review of submittals by Architect's consultants, Owner, or other parties is indicated, allow 21 days for initial review of each submittal.
 5. Concurrent Consultant Review: Where the Contract Documents indicate that submittals may be transmitted simultaneously to Architect and to Architect's consultants, allow 15 days for review of each submittal. Submittal will be returned to Architect before being returned to Contractor.
 - a. Submit one copy of submittal to concurrent reviewer in addition to specified number of copies to Architect.
- D. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
1. Note date and content of previous submittal.
 2. Note date and content of revision in label or title block, and clearly indicate extent of revision.
 3. Resubmit submittals until they are marked with approval notation from Architect's action stamp.

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- E. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- F. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Architect's action stamp.

1.7 SUBMITTAL REQUIREMENTS

- A. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
 - 1. If information must be specially prepared for submittal because standard published data are unsuitable for use, submit as Shop Drawings, not as Product Data.
 - 2. Mark each copy of each submittal to show which products and options are applicable.
 - 3. Include the following information, as applicable:
 - a. Manufacturer's catalog cuts.
 - b. Manufacturer's product specifications.
 - c. Standard color charts.
 - d. Statement of compliance with specified referenced standards.
 - e. Testing by recognized testing agency.
 - f. Application of testing agency labels and seals.
 - g. Notation of coordination requirements.
 - h. Availability and delivery time information.
 - 4. For equipment, include the following in addition to the above, as applicable:
 - a. Wiring diagrams that show factory-installed wiring.
 - b. Printed performance curves.
 - c. Operational range diagrams.
 - d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.
 - 5. Submit Product Data before Shop Drawings, and before or concurrently with Samples.
- B. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.
 - 1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
 - a. Identification of products.
 - b. Schedules.
 - c. Compliance with specified standards.
 - d. Notation of coordination requirements.
 - e. Notation of dimensions established by field measurement.
 - f. Relationship and attachment to adjoining construction clearly indicated.
 - g. Seal and signature of professional engineer if specified.

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2. Paper Sheet Size: Except for templates, patterns, and similar full-size Drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches (215 by 280 mm), but no larger than 30 by 42 inches (750 by 1067 mm).
 - a. Three opaque copies of each submittal. Architect will retain two copies; remainder will be returned.
- C. Samples: Submit Samples for review of type, color, pattern, and texture for a check of these characteristics with other materials.
1. Transmit Samples that contain multiple, related components, such as accessories together in one submittal package.
 2. Identification: Permanently attach label on unexposed side of Samples that includes the following:
 - a. Project name and submittal number.
 - b. Generic description of Sample.
 - c. Product name and name of manufacturer.
 - d. Sample source.
 - e. Number and title of applicable Specification Section.
 - f. Specification paragraph number and generic name of each item.
 3. Email Transmittal: Provide PDF transmittal. Include digital image file illustrating Sample characteristics and identification information for record.
 4. Web-Based Project Management Software: Prepare submittals in PDF form, and upload to web-based Project software website. Enter required data in web-based software site to fully identify submittal.
 5. Paper Transmittal: Include paper transmittal, including complete submittal information indicated.
 6. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
 - a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
 - b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
 7. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units, showing the full range of colors, textures, and patterns available.
 - a. Number of Samples: Submit one full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.
 8. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or

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containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.

- a. Number of Samples: Submit three sets of Samples. Architect will retain two Sample sets; remainder will be returned.
 - 1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
 - 2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.
- D. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:
 1. Type of product. Include unique identifier for each product indicated in the Contract Documents or assigned by Contractor if none is indicated.
 2. Manufacturer and product name, and model number if applicable.
 3. Number and name of room or space.
 4. Location within room or space.
- E. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified.
- F. Design Data: Prepare and submit written and graphic information indicating compliance with indicated performance and design criteria in individual Specification Sections. Include list of assumptions and summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Number each page of submittal.
- G. Certificates:
 1. Certificates and Certifications Submittals: Submit a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity. Provide a notarized signature where indicated.
 2. Installer Certificates: Submit written statements on manufacturer's letterhead, certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
 3. Manufacturer Certificates: Submit written statements on manufacturer's letterhead, certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
 4. Material Certificates: Submit written statements on manufacturer's letterhead, certifying that material complies with requirements in the Contract Documents.
 5. Product Certificates: Submit written statements on manufacturer's letterhead, certifying that product complies with requirements in the Contract Documents.

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6. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of AWS B2.1/B2.1M on AWS forms. Include names of firms and personnel certified.

H. Test and Research Reports:

1. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for substrate preparation and primers required.
2. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
3. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
4. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
5. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
6. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:
 - a. Name of evaluation organization.
 - b. Date of evaluation.
 - c. Time period when report is in effect.
 - d. Product and manufacturers' names.
 - e. Description of product.
 - f. Test procedures and results.
 - g. Limitations of use.

1.8 CONTRACTOR'S REVIEW

- A. Action Submittals and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.
- B. Contractor's Approval: Indicate Contractor's approval for each submittal with a uniform approval stamp. Include name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

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1. Architect will not review submittals received from Contractor that do not have Contractor's review and approval.

1.9 ARCHITECT'S REVIEW

- A. Action Submittals: Architect will review each submittal, indicate corrections or revisions required, and return.
- B. Informational Submittals: Architect will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.
- C. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Architect.
- D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.
- E. Architect will return without review submittals received from sources other than Contractor.
- F. Submittals not required by the Contract Documents will be returned by Architect without action.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013300

SECTION 013591 - HISTORIC TREATMENT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes general protection and treatment procedures for designated historic spaces, areas, rooms, and surfaces in Project.

1.3 DEFINITIONS

- A. Consolidate: To strengthen loose or deteriorated materials in place.
- B. Design Reference Sample: A sample that represents Architect's prebid selection of work to be matched; it may be existing work or work specially produced for Project.
- C. Dismantle: To disassemble or detach a historic item from a surface, or a nonhistoric item from a historic surface, using gentle methods and equipment to prevent damage to historic items and surfaces; disposing of items unless indicated to be salvaged or reinstalled.
- D. Historic: Spaces, areas, rooms, surfaces, materials, finishes, and overall appearance that are important to the successful restoration and reconstruction as determined by Architect. Designated historic areas are indicated on Drawings and scheduled in Part 3.
- E. Match: To blend with adjacent construction and manifest no apparent difference in material type, species, cut, form, detail, color, grain, texture, or finish; as approved by Architect.
- F. Refinish: To remove existing finishes to base material and apply new finish to match original, or as otherwise indicated.
- G. Reinstall: To protect removed or dismantled item, repair and clean it as indicated for reuse, and reinstall it in original position, or where indicated.
- H. Remove: To take down or detach a nonhistoric item located within a historic space, area, or room, using methods and equipment to prevent damage to historic items and surfaces; disposing of items unless indicated to be salvaged or reinstalled.
- I. Repair: To correct damage and defects, retaining existing materials, features, and finishes while employing as little new material as possible. This includes patching, piecing-in, splicing, consolidating, or otherwise reinforcing or upgrading materials.

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- J. Replace: To remove, duplicate, and reinstall entire item with new material. The original item is the pattern for creating duplicates unless otherwise indicated.
- K. Replicate: To reproduce in exact detail, materials, and finish unless otherwise indicated.
- L. Reproduce: To fabricate a new item, accurate in detail to the original, and from either the same or a similar material as the original, unless otherwise indicated.
- M. Restore: To consolidate, replicate, reproduce, repair, and refinish as required to achieve the indicated results.
- N. Retain: To keep existing items that are not to be removed or dismantled.
- O. Reversible: New construction work, treatments, or processes that can be removed or undone in the future without damaging historic materials unless otherwise indicated.
- P. Salvage: To protect removed or dismantled items and deliver them to Owner ready for reuse.
- Q. Stabilize: To provide structural reinforcement of unsafe or deteriorated items while maintaining the essential form as it exists at present; also, to reestablish a weather-resistant enclosure.
- R. Strip: To remove existing finish down to base material unless otherwise indicated.

1.4 COORDINATION

- A. Historic Treatment Subschedule: A construction schedule coordinating the sequencing and scheduling of historic treatment work for entire Project, including each activity to be performed in historic spaces, areas, and rooms, and on historic surfaces; and based on Contractor's Construction Schedule. Secure time commitments for performing critical construction activities from separate entities responsible for historic treatment work.
 - 1. Schedule construction operations in sequence required to obtain best historic treatment results.
 - 2. Coordinate sequence of historic treatment work activities to accommodate the following:
 - a. Owner's continuing occupancy of portions of existing building.
 - b. Owner's partial occupancy of completed Work.
 - 3. Detail sequence of historic treatment work, with start and end dates.
 - 4. Utility Services: Indicate how long utility services will be interrupted. Coordinate shutoff, capping, and continuation of utility services.

1.5 PROJECT MEETINGS FOR HISTORIC TREATMENT

- A. Preliminary Historic Treatment Conference: Before starting historic treatment work, conduct conference at Project site.
 - 1. Attendees: In addition to representatives of Owner, Architect, and Contractor, testing service representative, historic treatment specialists, chemical-cleaner manufacturer(s),

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- and installers whose work interfaces with or affects historic treatment shall be represented at the meeting.
2. Agenda: Discuss items of significance that could affect progress of historic treatment work, including review of the following:
 - a. Historic Treatment Sub-schedule: Discuss and finalize; verify availability of materials, historic treatment specialists' personnel, equipment, and facilities needed to make progress and avoid delays.
 - b. Fire-prevention plan.
 - c. Governing regulations.
 - d. Areas where existing construction is to remain and the required protection.
 - e. Hauling routes.
 - f. Sequence of historic treatment work operations.
 - g. Storage, protection, and accounting for salvaged and specially fabricated items.
 - h. Existing conditions, staging, and structural loading limitations of areas where materials are stored.
 - i. Qualifications of personnel assigned to historic treatment work and assigned duties.
 - j. Requirements for extent and quality of work, tolerances, and required clearances.
 - k. Methods and procedures related to historic treatments, including product manufacturers' written instructions and precautions regarding historic treatment procedures and their effects on materials, components, and vegetation.
 - l. Embedded work such as flashings and lintels, special details, collection of wastes, protection of occupants and the public, and condition of other construction that affect the Work or will affect the work.
 3. Reporting: Record conference results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from conference.
- B. Coordination Meetings: Conduct specifically for historic treatment work at biweekly intervals. Coordination meetings are in addition to specific meetings held for other purposes, such as progress meetings and preinstallation conferences.
1. Attendees: In addition to representatives of Owner, Architect, and Contractor, each historic treatment specialist, supplier, installer, and other entity concerned with progress or involved in planning, coordination, or performance of historic treatment work activities shall be represented at these meetings. All participants at conference shall be familiar with Project and authorized to conclude matters relating to historic treatment work.
 2. Agenda: Review and correct or approve minutes of previous coordination meeting. Review other items of significance that could affect progress of historic treatment work. Include topics for discussion as appropriate to status of Project.
 - a. Historic Treatment Subschedule: Review progress since last coordination meeting. Determine whether each schedule item is on time, ahead of schedule, or behind schedule. Determine how construction behind schedule will be expedited with retention of quality; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities are completed within the Contract Time.

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- b. Schedule Updating: Revise Contractor's Historic Treatment Subschedule after each coordination meeting where revisions to schedule have been made or recognized. Issue revised schedule concurrently with report of each meeting.
 - c. Review present and future needs of each entity present, including review items listed in the "Preliminary Historic Treatment Conference" Paragraph in this article and the following:
 - 1) Interface requirements of historic treatment work with other Project Work.
 - 2) Status of submittals for historic treatment work.
 - 3) Access to historic treatment work.
 - 4) Effectiveness of fire-prevention plan.
 - 5) Quality and work standards of historic treatment work.
 - 6) Change Orders for historic treatment work.
3. Reporting: Record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

1.6 MATERIALS OWNERSHIP

- A. Historic items, relics, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, antiques, and other items of interest or value to Owner that may be encountered or uncovered during the Work, regardless of whether they were previously documented, remain Owner's property.
 - 1. Dismantle and salvage each item or object and protect it from damage, then promptly deliver it to Owner where directed at Project site.
 - 2. Coordinate with Owner's historical adviser who will establish special procedures for dismantling and salvaging.

1.7 INFORMATIONAL SUBMITTALS

- A. Historic Treatment Sub-schedule:
 - 1. Submit historic treatment sub-schedule within seven days of date established for commencement of historic treatment work.
- B. Preconstruction Documentation: Show preexisting conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by Contractor's historic treatment operations.
- C. Historic Treatment Program: Submit 30 days before work begins.
- D. Fire-Prevention Plan: Submit 30 days before work begins.

1.8 QUALITY ASSURANCE

- 1. Field Supervisor Qualifications: Full-time supervisors experienced in historic treatment work similar in nature, material, design, and extent to that indicated for this Project.

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Supervisors shall be on site when historic treatment work begins and during its progress. Supervisors shall not be changed during Project except for causes beyond control of the specialist firm.

- a. Construct new mockups of required work whenever a supervisor is replaced.
 - B. Title X Requirement: Each firm conducting activities that disturb painted surfaces shall be a "Lead-Safe Certified Firm" according to 40 CFR 745, Subpart E, and use only workers that are trained in lead-safe work practices.
 - C. Historic Treatment Program: Prepare a written plan for historic treatment for whole Project, including each phase or process and protection of surrounding materials during operations. Describe in detail the materials, methods, and equipment to be used for each phase of work. Show compliance with indicated methods and procedures specified in this and other Sections. Coordinate this whole-Project historic treatment program with specific requirements of programs required in other historic treatment Sections.
 1. Dust and Noise Control: Include locations of proposed temporary dust- and noise-control partitions and means of egress from occupied areas coordinated with continuing on-site operations and other known work in progress.
 2. Debris Hauling: Include plans clearly marked to show debris hauling routes, turning radii, and locations and details of temporary protective barriers.
 - D. Fire-Prevention Plan: Prepare a written plan for preventing fires during the Work, including placement of fire extinguishers, fire blankets, rag buckets, and other fire-control devices during each phase or process. Coordinate plan with Owner's fire-protection equipment and requirements. Include fire-watch personnel's training, duties, and authority to enforce fire safety.
 - E. Safety and Health Standard: ANSI/ASSE A10.6.
- 1.9 STORAGE AND HANDLING OF HISTORIC MATERIALS
- A. Salvaged Historic Materials:
 1. Clean loose dirt and debris from salvaged historic items unless more extensive cleaning is indicated.
 2. Pack or crate items after cleaning; cushion against damage during handling. Label contents of containers.
 3. Store items in a secure area until delivery to Owner.
 4. Transport items to Owner's storage area designated by Owner.
 5. Protect items from damage during transport and storage.
 - B. Historic Materials for Reinstallation:
 1. Repair and clean historic items for reuse as indicated.
 2. Pack or crate items after cleaning and repairing; cushion against damage during handling. Label contents of containers.
 3. Protect items from damage during transport and storage.

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4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment unless otherwise indicated. Provide connections, supports, and miscellaneous materials to make items functional for use indicated.
- C. Existing Historic Materials to Remain: Protect construction indicated to remain against damage and soiling from construction work. Where permitted by Architect, items may be dismantled and taken to a suitable, protected storage location during construction work and reinstalled in their original locations after historic treatment and construction work in the vicinity is complete.
- D. Storage: Catalog and store historic items within a weathertight enclosure where they are protected from moisture, weather, condensation, and freezing temperatures.
1. Identify each item with a nonpermanent mark to document its original location. Indicate original locations on plans, elevations, sections, or photographs by annotating the identifying marks.
 2. Secure stored materials to protect from theft.
 3. Control humidity so that it does not exceed 85 percent. Maintain temperatures **5 deg F (3 deg C)** or more above the dew point.
- E. Storage Space:
1. Owner will arrange for limited on-site location(s) for free storage of historic material.

1.10 FIELD CONDITIONS

- A. Size Limitations in Historic Spaces: Materials, products, and equipment used for performing the Work and for transporting debris, materials, and products shall be of sizes that clear surfaces within historic spaces, areas, rooms, and openings, including temporary protection, by **12 inches (300 mm)** or more.

PART 2 - PRODUCTS - (Not Used)

PART 3 - EXECUTION

3.1 PROTECTION

- A. Protect persons, motor vehicles, surrounding surfaces of building, building site, plants, and surrounding buildings from harm resulting from historic treatment procedures.
1. Use only proven protection methods, appropriate to each area and surface being protected.
 2. Provide temporary barricades, barriers, and directional signage to exclude the public from areas where historic treatment work is being performed.
 3. Erect temporary barriers to form and maintain fire-egress routes.
 4. Erect temporary protective covers over walkways and at points of pedestrian and vehicular entrance and exit that must remain in service during historic treatment work.

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5. Contain dust and debris generated by historic treatment work, and prevent it from reaching the public or adjacent surfaces.
6. Provide shoring, bracing, and supports as necessary. Do not overload structural elements.
7. Protect floors and other surfaces along hauling routes from damage, wear, and staining.

B. Temporary Protection of Historic Materials:

1. Protect existing historic materials with temporary protections and construction. Do not remove existing materials unless otherwise indicated.
2. Do not attach temporary protection to historic surfaces except as indicated as part of the historic treatment program and approved by Architect.

C. Comply with each product manufacturer's written instructions for protections and precautions. Protect against adverse effects of products and procedures on people and adjacent materials, components, and vegetation.

D. Utility and Communications Services:

1. Notify Owner, Architect, authorities having jurisdiction, and entities owning or controlling wires, conduits, pipes, and other services affected by historic treatment work before commencing operations.
2. Disconnect and cap pipes and services as required by authorities having jurisdiction, as required for historic treatment work.
3. Maintain existing services unless otherwise indicated; keep in service, and protect against damage during operations. Provide temporary services during interruptions to existing utilities.

E. Existing Drains: Prior to the start of work in an area, test drainage system to ensure that it is functioning properly. Notify Architect immediately of inadequate drainage or blockage. Do not begin work in an area until the drainage system is functioning properly.

1. Prevent solids such as stone or mortar residue or other debris from entering the drainage system. Clean out drains and drain lines that become sluggish or blocked by sand or other materials resulting from historic treatment work.
2. Protect drains from pollutants. Block drains or filter out sediments, allowing only clean water to pass.

F. Existing Roofing: Prior to the start of work in an area, install roofing protection.

3.2 PROTECTION FROM FIRE

A. Follow fire-prevention plan and the following:

1. Comply with NFPA 241 requirements unless otherwise indicated. Perform duties titled "Owner's Responsibility for Fire Protection."
2. Remove and keep area free of combustibles, including rubbish, paper, waste, and chemicals, unless necessary for the immediate work.
 - a. If combustible material cannot be removed, provide fire blankets to cover such materials.

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3. Prohibit smoking by all persons within Project work and staging areas.
- B. Heat-Generating Equipment and Combustible Materials: Comply with the following procedures while performing work with heat-generating equipment or combustible materials, including welding, torch-cutting, soldering, brazing, removing paint with heat, or other operations where open flames or implements using high heat or combustible solvents and chemicals are anticipated:
1. Obtain Owner's approval for operations involving use of welding or other high-heat equipment. Use of open-flame equipment is not permitted. Notify Owner at least 72 hours before each occurrence, indicating location of such work.
 2. Use fireproof baffles to prevent flames, sparks, hot gases, or other high-temperature material from reaching surrounding combustible material.
 3. Prevent the spread of sparks and particles of hot metal through open windows, doors, holes, and cracks in floors, walls, ceilings, roofs, and other openings.
 4. Fire Watch: Before working with heat-generating equipment or combustible materials, station personnel to serve as a fire watch at each location where such work is performed. Fire-watch personnel shall have the authority to enforce fire safety. Station fire watch according to NFPA 51B, NFPA 241, and as follows:
 - a. Train each fire watch in proper operation of fire-control equipment and alarms.
 - b. Prohibit fire-watch personnel from other work that would distract from fire-watch duties.
 - c. Cease work with heat-generating equipment whenever fire-watch personnel are not present.
 - d. Have fire-watch personnel perform final fire-safety inspection each day beginning no sooner than 30 minutes after conclusion of work in each area to detect hidden or smoldering fires and to ensure that proper fire prevention is maintained.
 - e. Maintain fire-watch personnel at each area of Project site until 60 minutes after conclusion of daily work.
- C. Fire-Control Devices: Provide and maintain fire extinguishers, fire blankets, and rag buckets for disposal of rags with combustible liquids. Maintain each as suitable for type of fire risk in each work area. Ensure that nearby personnel and fire-watch personnel are trained in fire-extinguisher and blanket use.

3.3 PROTECTION DURING APPLICATION OF CHEMICALS

- A. Cover adjacent surfaces with protective materials that are proven to resist chemicals selected for Project unless chemicals being used will not damage adjacent surfaces as indicated in historic treatment program. Use covering materials and masking agents that are waterproof and UV resistant and that will not stain or leave residue on surfaces to which they are applied. Apply protective materials according to manufacturer's written instructions. Do not apply liquid masking agents or adhesives to painted or porous surfaces. When no longer needed, promptly remove protective materials.
- B. Do not apply chemicals during winds of sufficient force to spread them to unprotected surfaces.
- C. Neutralize alkaline and acid wastes and legally dispose of off Owner's property.

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- D. Collect and dispose of runoff from chemical operations by legal means and in a manner that prevents soil contamination, soil erosion, undermining of paving and foundations, damage to landscaping, or water penetration into building interior.

3.4 GENERAL HISTORIC TREATMENT

- A. Have historic treatment work performed only by qualified historic treatment specialists.
- B. Ensure that supervisory personnel are present when historic treatment work begins and during its progress.
- C. Record existing work before each procedure (preconstruction), and record progress during the work. Use digital preconstruction documentation photographs. Comply with requirements in Section 013233 "Photographic Documentation."
- D. Perform regular inspections of Project site as the Work progresses to detect hazards resulting from historic treatment procedures.
- E. Follow the procedures in subparagraphs below and procedures approved in historic treatment program unless otherwise indicated:
 - 1. Retain as much existing material as possible; repair and consolidate rather than replace.
 - 2. Use additional material or structure to reinforce, strengthen, prop, tie, and support existing material or structure.
 - 3. Use reversible processes wherever possible.
 - 4. Use historically accurate repair and replacement materials and techniques unless otherwise indicated.
 - 5. Record existing work before each procedure (preconstruction) and progress during the work with digital preconstruction documentation photographs. Comply with requirements in Section 013233 "Photographic Documentation."
- F. Notify Architect of visible changes in the integrity of material or components whether from environmental causes including biological attack, UV degradation, freezing, or thawing or from structural defects including cracks, movement, or distortion.
 - 1. Do not proceed with the work in question until directed by Architect.
- G. Where work requires existing features to be removed or dismantled and reinstalled, perform these operations without damage to the material itself, to adjacent materials, or to the substrate.
- H. Identify new and replacement materials and features with permanent marks hidden in the completed Work to distinguish them from original materials. Record a legend of identification marks and the locations of the items on record Drawings.

3.5 HISTORIC TREATMENT SCHEDULE

- A. Spaces, areas, rooms, and surfaces requiring special care and treatment to ensure successful restoration and reconstruction are generally described below.

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1. Entire interior and exterior of Burrowes Mansion.

END OF SECTION 013591

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SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.
- B. Related Requirements:
 - 1. Section 011000 "Summary" for work restrictions and limitations on utility interruptions.

1.3 USE CHARGES

- A. Installation, removal, and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated. Allow other entities engaged in the Project to use temporary services and facilities without cost, including, but not limited to, Architect, occupants of Project, testing agencies, and authorities having jurisdiction.
- B. Water Service: Owner will pay water-service use charges for water used by all entities for construction operations.
- C. Electric Power Service: Owner will pay electric-power-service use charges for electricity used by all entities for construction operations.
- D. Water and Sewer Service from Existing System: Water from Owner's existing water system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.
- E. Electric Power Service from Existing System: Electric power from Owner's existing system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.

1.4 INFORMATIONAL SUBMITTALS

- A. Site Utilization Plan: Show temporary facilities, temporary utility lines and connections, staging areas, construction site entrances, vehicle circulation, and parking areas for construction personnel.

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- B. Implementation and Termination Schedule: Within 15 days of date established for commencement of the Work, submit schedule indicating implementation and termination dates of each temporary utility.
- C. Project Identification and Temporary Signs: Show fabrication and installation details, including plans, elevations, details, layouts, typestyles, graphic elements, and message content.
- D. Fire-Safety Program: Show compliance with requirements of NFPA 241 and authorities having jurisdiction. Indicate Contractor personnel responsible for management of fire-prevention program.
- E. Moisture- and Mold-Protection Plan: Describe procedures and controls for protecting materials and construction from water absorption and damage and mold. Describe delivery, handling, storage, installation, and protection provisions for materials subject to water absorption or water damage.
 - 1. Indicate procedures for discarding water-damaged materials, protocols for mitigating water intrusion into completed Work, and requirements for replacing water-damaged Work.
 - 2. Indicate sequencing of work that requires water, such as sprayed fire-resistive materials, plastering, and terrazzo grinding, and describe plans for dealing with water from these operations. Show procedures for verifying that wet construction has dried sufficiently to permit installation of finish materials.
 - 3. Indicate methods to be used to avoid trapping water in finished work.
- F. Dust- and HVAC-Control Plan: Submit coordination drawing and narrative that indicates the dust- and HVAC-control measures proposed for use, proposed locations, and proposed time frame for their operation. Include the following:
 - 1. Locations of dust-control partitions at each phase of work.
 - 2. HVAC system isolation schematic drawing.
 - 3. Location of proposed air-filtration system discharge.
 - 4. Waste-handling procedures.
 - 5. Other dust-control measures.
- G. Noise and Vibration Control Plan: Identify construction activities that may impact the occupancy and use of existing spaces within the building or adjacent existing buildings, whether occupied by others, or occupied by the Owner. Include the following:
 - 1. Methods used to meet the goals and requirements of the Owner.
 - 2. Concrete cutting method(s) to be used.
 - 3. Location of construction devices on the site.
 - 4. Show compliance with the use and maintenance of quieted construction devices for the duration of the Project.
 - 5. Indicate activities that may disturb building occupants and that are planned to be performed during non-standard working hours as coordinated with the Owner.

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1.5 QUALITY ASSURANCE

- A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.
- B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

1.6 PROJECT CONDITIONS

- A. Temporary Use of Permanent Facilities: Engage Installer of each permanent service to assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Fencing: Plastic orange construction fence 36-inches.
- B. Polyethylene Sheet: Reinforced, fire-resistive sheet, 10-mil (0.25-mm) minimum thickness, with flame-spread rating of 15 or less in accordance with ASTM E84 and passing NFPA 701 Test Method 2.
- C. Dust-Control Adhesive-Surface Walk-Off Mats: Provide mats, minimum 36 by 60 inches (914 by 1524 mm).
- D. Insulation: Unfaced mineral-fiber blanket, manufactured from glass, slag wool, or rock wool; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively.

2.2 TEMPORARY FACILITIES

2.3 EQUIPMENT

- A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.

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PART 3 - EXECUTION

3.1 TEMPORARY FACILITIES, GENERAL

- A. Conservation: Coordinate construction and use of temporary facilities with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.
 - 1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. See other Sections for disposition of salvaged materials that are designated as Owner's property.

3.2 INSTALLATION, GENERAL

- A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.
- B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.
- C. Isolation of Work Areas in Occupied Facilities: Prevent dust, fumes, and odors from entering occupied areas.
 - 1. Prior to commencing work, isolate the HVAC system in area where work is to be performed.
 - a. Disconnect supply and return ductwork in work area from HVAC systems servicing occupied areas.
 - b. Maintain negative air pressure within work area, using HEPA-equipped air-filtration units, starting with commencement of temporary partition construction, and continuing until removal of temporary partitions is complete.
 - 2. Maintain dust partitions during the Work. Use vacuum collection attachments on dust-producing equipment. Isolate limited work within occupied areas using portable dust-containment devices.
 - 3. Perform daily construction cleanup and final cleanup using approved, HEPA-filter-equipped vacuum equipment.

3.3 TEMPORARY UTILITY INSTALLATION

- A. General: Install temporary service or connect to existing service.
 - 1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.

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- B. Water Service: Connect to Owner's existing water service facilities. Clean and maintain water service facilities in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.
- C. Sanitary Facilities: Provide temporary toilets, wash facilities, safety shower and eyewash facilities, and drinking water for use of construction personnel. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.
 - 1. Use of Permanent Toilets: Use of Owner's existing or new toilet facilities is not permitted.
- D. Temporary Heating and Cooling: Provide temporary heating and cooling required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed.
 - 1. Provide temporary dehumidification systems when required to reduce ambient and substrate moisture levels to level required to allow installation or application of finishes and their proper curing or drying.
- E. Electric Power Service: Provide electric power service and distribution system of sufficient size, capacity, and power characteristics required for construction operations.
 - 1. Install electric power service overhead unless otherwise indicated.
 - 2. Connect temporary service to Owner's existing power source, as directed by Owner.
- F. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.
 - 1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.

3.4 SUPPORT FACILITIES INSTALLATION

- A. Comply with the following:
 - 1. Utilize designated area within existing building for temporary field offices.
 - 2. Maintain support facilities until Architect schedules Substantial Completion inspection. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.
- B. Parking: Use designated areas of Owner's existing parking areas for construction personnel as directed by the owner.
- C. Storage and Staging: Use designated areas of Project site for storage and staging needs.
- D. Dewatering Facilities and Drains: Comply with requirements of authorities having jurisdiction. Maintain Project site, excavations, and construction free of water.

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1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties or endanger permanent Work or temporary facilities.
 2. Remove snow and ice as required to minimize accumulations.
- E. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with progress cleaning requirements in Section 017300 "Execution."
- F. Temporary Use of Permanent Stairs: Use of existing stairs for construction traffic will be permitted, provided stairs are protected and finishes restored to new condition at time of Substantial Completion.

3.5 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.
- B. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
1. Comply with work restrictions specified in Section 011000 "Summary."
- C. Tree and Plant Protection: Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion.
- D. Pest Control: Engage pest-control service to recommend practices to minimize attraction and harboring of rodents, roaches, and other pests and to perform extermination and control procedures at regular intervals, so Project will be free of pests and their residues at Substantial Completion. Perform control operations lawfully, using materials approved by authorities having jurisdiction.
- E. Site Enclosure Fence: Prior to commencing earthwork, furnish and install site enclosure fence in a manner that will prevent people from easily entering site except by entrance gates.
1. Extent of Fence: As required to enclose entire Project site or portion determined sufficient to accommodate construction operations.
- F. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.
- G. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.
1. Where heating or cooling is needed and permanent enclosure is incomplete, insulate temporary enclosures.

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- H. Temporary Partitions: Provide floor-to-ceiling dustproof partitions to limit dust and dirt migration and to separate areas occupied by Owner from fumes and noise.
1. Construct dustproof partitions with two layers of 6-mil (0.14-mm) polyethylene sheet on each side. Cover floor with two layers of 6-mil (0.14-mm) polyethylene sheet, extending sheets 18 inches (460 mm) up the sidewalls. Overlap and tape full length of joints. Cover floor with fire-retardant-treated plywood.
 - a. Construct vestibule and airlock at each entrance through temporary partition with not less than 48 inches (1219 mm) between doors. Maintain water-dampened foot mats in vestibule.
 2. Protect air-handling equipment.
 3. Provide walk-off mats at each entrance through temporary partition.
- I. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241; manage fire-prevention program.
1. Prohibit smoking in construction areas. Comply with additional limits on smoking specified in other Sections.
 2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition in accordance with requirements of authorities having jurisdiction.
 3. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.
 4. Provide temporary standpipes and hoses for fire protection. Hang hoses with a warning sign, stating that hoses are for fire-protection purposes only and are not to be removed. Match hose size with outlet size and equip with suitable nozzles.

3.6 MOISTURE AND MOLD CONTROL

- A. Moisture and Mold Protection: Protect stored materials and installed Work in accordance with Moisture and Mold Protection Plan.
- B. Controlled Construction Period: After completing and sealing of the building enclosure but prior to the full operation of permanent HVAC systems, maintain as follows:
1. Control moisture and humidity inside building by maintaining effective dry-in conditions.
 2. Use temporary or permanent HVAC system to control humidity within ranges specified for installed and stored materials.
 3. Comply with manufacturer's written instructions for temperature, relative humidity, and exposure to water limits.
 - a. Hygroscopic materials that may support mold growth, including wood and gypsum-based products, that become wet during the course of construction and remain wet for 48 hours are considered defective and require replacing.
 - b. Measure moisture content of materials that have been exposed to moisture during construction operations or after installation. Record readings beginning at time of exposure and continuing daily for 48 hours. Identify materials containing moisture levels higher than allowed. Report findings in writing to Architect.

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- c. Remove and replace materials that cannot be completely restored to their manufactured moisture level within 48 hours.

3.7 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.
- B. Maintenance: Maintain facilities in good operating condition until removal.
 1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
- C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.
- D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
 1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.
 2. Remove temporary roads and paved areas not intended for or acceptable for integration into permanent construction. Where area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant materials or lawns. Repair or replace street paving, curbs, and sidewalks at temporary entrances, as required by authorities having jurisdiction.
 3. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Section 017700 "Closeout Procedures."

END OF SECTION 015000

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SECTION 017300 - EXECUTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes general administrative and procedural requirements governing execution of the Work, including, but not limited to, the following:

1. Construction layout.
2. Field engineering and surveying.
3. Installation of the Work.
4. Cutting and patching.
5. Coordination of Owner's portion of the Work.
6. Coordination of Owner-installed products.
7. Progress cleaning.
8. Starting and adjusting.
9. Protection of installed construction.

- B. Related Requirements:

1. Section 011000 "Summary" for coordination of, Owner-performed work, and limits on use of Project site.
2. Section 013300 "Submittal Procedures" for submitting surveys.
3. Section 017700 "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, replacing defective work, and final cleaning.
4. Section 024119 "Selective Demolition" for demolition and removal of selected portions of the building.

1.3 DEFINITIONS

- A. Cutting: Removal of in-place construction necessary to permit installation or performance of subsequent work.
- B. Patching: Fitting and repair work required to restore construction to original conditions after installation of subsequent work.

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1.4 PREINSTALLATION MEETINGS

A. Cutting and Patching Conference: Conduct conference at Project site.

1. Prior to commencing work requiring cutting and patching, review extent of cutting and patching anticipated and examine procedures for ensuring satisfactory result from cutting and patching work. Inform Architect of scheduled meeting. Require representatives of each entity directly concerned with cutting and patching to attend, including the following:
 - a. Contractor's superintendent.
 - b. Trade supervisor responsible for cutting operations.
 - c. Trade supervisor(s) responsible for patching of each type of substrate.
 - d. Mechanical, electrical, and utilities subcontractors' supervisors, to the extent each trade is affected by cutting and patching operations.
2. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

B. Layout Conference: Conduct conference at Project site.

1. Prior to establishing layout of new and existing perimeter and structural column grid(s), review building location requirements. Review benchmark, control point, and layout and dimension requirements. Inform Architect of scheduled meeting. Require representatives of each entity directly concerned with Project layout to attend, including the following:
 - a. Contractor's superintendent.
 - b. Contractor's personnel responsible for performing Project surveying and layout.
2. Review meanings and intent of dimensions, notes, terms, graphic symbols, and other layout information indicated on the Drawings.
3. Review requirements for including layouts on Shop Drawings and other submittals.
4. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

1.5 INFORMATIONAL SUBMITTALS

A. Cutting and Patching Plan: Submit plan describing procedures at least 10 days prior to the time cutting and patching will be performed. Include the following information:

1. Extent: Describe reason for and extent of each occurrence of cutting and patching.
2. Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building appearance and other significant visual elements.
3. Products: List products to be used for patching and firms or entities that will perform patching work.
4. Dates: Indicate when cutting and patching will be performed.
5. Utilities and Mechanical and Electrical Systems: List services and systems that cutting and patching procedures will disturb or affect. List services and systems that will be

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relocated and those that will be temporarily out of service. Indicate length of time permanent services and systems will be disrupted.

- a. Include description of provisions for temporary services and systems during interruption of permanent services and systems.
- B. Landfill Receipts: Submit copy of receipts issued by a landfill facility, licensed to accept hazardous materials, for hazardous waste disposal.

1.6 QUALITY ASSURANCE

- A. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.
1. Structural Elements: When cutting and patching structural elements, or when encountering the need for cutting and patching of elements whose structural function is not known, notify Architect of locations and details of cutting and await directions from Architect before proceeding. Shore, brace, and support structural elements during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection.
 2. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety. Operational elements include the following:
 - a. Control systems.
 - b. Communication systems.
 - c. Fire-detection and -alarm systems.
 - d. Electrical wiring systems.
 3. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety.
 - a. Water, moisture, or vapor barriers.
 - b. Membranes and flashings.
 - c. Sprayed fire-resistive material.
 - d. Equipment supports.
 - e. Piping, ductwork, vessels, and equipment.
 - f. Noise- and vibration-control elements and systems.
 4. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.
- B. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of specified products and equipment.

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PART 2 - PRODUCTS

2.1 MATERIALS

- A. Comply with requirements specified in other Sections.
- B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
 - 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Architect for the visual and functional performance of in-place materials. Use materials that are not considered hazardous.
- C. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.
 - 1. Use cleaning products that comply with Green Seal's GS-37, or if GS-37 is not applicable, use products that comply with the California Code of Regulations maximum allowable VOC levels.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities, mechanical and electrical systems, and other construction affecting the Work.
 - 1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, gas service piping, and water-service piping; underground electrical services; and other utilities.
 - 2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.
- B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
 - 1. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
 - 2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
 - 3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.

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- C. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:
 - 1. Description of the Work, including Specification Section number and paragraph, and Drawing sheet number and detail, where applicable.
 - 2. List of detrimental conditions, including substrates.
 - 3. List of unacceptable installation tolerances.
 - 4. Recommended corrections.
- D. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. Existing Utility Information: Furnish information to local utility that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.
- B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to Architect in accordance with requirements in Section 013100 "Project Management and Coordination."

3.3 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks and existing conditions. If discrepancies are discovered, notify Architect promptly.
- B. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and rim and invert elevations.
- C. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.
- D. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and

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duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Architect.

3.4 INSTALLATION

- A. Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
 - 1. Make vertical work plumb, and make horizontal work level.
 - 2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
 - 3. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.
 - 4. Maintain minimum headroom clearance of **96 inches (2440 mm)** in occupied spaces and **90 inches (2300 mm)** in unoccupied spaces, unless otherwise indicated on Drawings.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure satisfactory results as judged by Architect. Maintain conditions required for product performance until Substantial Completion.
- D. Conduct construction operations, so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy of type expected for Project.
- E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on-site and placement in permanent locations.
- F. Tools and Equipment: Select tools or equipment that minimize production of excessive noise levels.
- G. Templates: Obtain and distribute to the parties involved templates for Work specified to be factory prepared and field installed. Check Shop Drawings of other portions of the Work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
- H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions with manufacturer.
 - 1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
 - 2. Allow for building movement, including thermal expansion and contraction.
 - 3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

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- I. Joints: Make joints of uniform width. Where joint locations in exposed Work are not indicated, arrange joints for the best visual effect, as judged by Architect. Fit exposed connections together to form hairline joints.
- J. Repair or remove and replace damaged, defective, or nonconforming Work.
 - 1. Comply with Section 017700 "Closeout Procedures" for repairing or removing and replacing defective Work.

3.5 CUTTING AND PATCHING

- A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
 - 1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.
- C. Temporary Support: Provide temporary support of Work to be cut.
- D. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- E. Adjacent Occupied Areas: Where interference with use of adjoining areas or interruption of free passage to adjoining areas is unavoidable, coordinate cutting and patching in accordance with requirements in Section 011000 "Summary."
- F. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to minimize interruption to occupied areas.
- G. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
 - 1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 - 2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
 - 3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
 - 4. Excavating and Backfilling: Comply with requirements in applicable Sections where required by cutting and patching operations.

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5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
 6. Proceed with patching after construction operations requiring cutting are complete.
- H. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as practicable, as judged by Architect. Provide materials and comply with installation requirements specified in other Sections, where applicable.
1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
 2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
 - a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
 - b. Restore damaged pipe covering to its original condition.
 3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
 - a. Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch, corner to corner of wall and edge to edge of ceiling. Provide additional coats until patch blends with adjacent surfaces.
 4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
 5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.
- I. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

3.6 PROGRESS CLEANING

- A. Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.
 1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
 2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F (27 deg C).

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3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
 - a. Use containers intended for holding waste materials of type to be stored.
 4. Coordinate progress cleaning for joint-use areas where Contractor and other contractors are working concurrently.
- B. Site: Maintain Project site free of waste materials and debris.
- C. Work Areas: Clean areas where Work is in progress to the level of cleanliness necessary for proper execution of the Work.
1. Remove liquid spills promptly.
 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- F. Exposed Surfaces: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Section 015000 "Temporary Facilities and Controls."
- H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- J. Limiting Exposures: Supervise construction operations to ensure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.
- 3.7 STARTING AND ADJUSTING
- A. Coordinate startup and adjusting of equipment and operating components with requirements in Section 019113 "General Commissioning Requirements."
 - B. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.

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- C. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.
- D. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- E. Manufacturer's Field Service: Comply with qualification requirements in Section 014000 "Quality Requirements."

3.8 PROTECTION AND REPAIR OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
- B. Repair Work previously completed and subsequently damaged during construction period. Repair to like-new condition.
- C. Protection of Existing Items: Provide protection and ensure that existing items to remain undisturbed by construction are maintained in condition that existed at commencement of the Work.
- D. Comply with manufacturer's written instructions for temperature and relative humidity.

END OF SECTION 017300

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SECTION 017700 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for Contract closeout, including, but not limited to, the following:
 - 1. Substantial Completion procedures.
 - 2. Final completion procedures.
 - 3. Warranties.
 - 4. Final cleaning.
- B. Related Requirements:
 - 1. Section 012900 "Payment Procedures" for requirements for Applications for Payment for Substantial Completion and Final Completion.
 - 2. Section 013233 "Photographic Documentation" for submitting Final Completion construction photographic documentation.
 - 3. Section 017839 "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.

1.3 DEFINITIONS

- A. List of Incomplete Items: Contractor-prepared list of items to be completed or corrected, prepared for the Architect's use prior to Architect's inspection, to determine if the Work is substantially complete.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of cleaning agent.
- B. Contractor's List of Incomplete Items: Initial submittal at Substantial Completion.
- C. Certified List of Incomplete Items: Final submittal at Final Completion.

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1.5 CLOSEOUT SUBMITTALS

- A. Certificates of Release: From authorities having jurisdiction.
- B. Certificate of Insurance: For continuing coverage.

1.6 MAINTENANCE MATERIAL SUBMITTALS

- A. Schedule of Maintenance Material Items: For maintenance material submittal items required by other Sections.

1.7 SUBSTANTIAL COMPLETION PROCEDURES

- A. Contractor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's "punch list"), indicating the value of each item on the list and reasons why the Work is incomplete.
- B. Submittals Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
 - 1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction, permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
 - 2. Submit closeout submittals specified in other Division 01 Sections, including Project Record Documents, operation and maintenance manuals, damage or settlement surveys, property surveys, and similar final record information.
 - 3. Submit closeout submittals specified in individual Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
 - 4. Submit maintenance material submittals specified in individual Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by Architect or Owner. Label with manufacturer's name and model number.
 - 5. Submit testing, adjusting, and balancing records.
 - 6. Submit sustainable design submittals not previously submitted.
 - 7. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
- C. Procedures Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
 - 1. Advise Owner of pending insurance changeover requirements.
 - 2. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
 - 3. Complete startup and testing of systems and equipment.
 - 4. Perform preventive maintenance on equipment used prior to Substantial Completion.
 - 5. Advise Owner of changeover in utility services.

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6. Participate with Owner in conducting inspection and walkthrough with local emergency responders.
 7. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
 8. Complete final cleaning requirements.
 9. Touch up paint and otherwise repair and restore marred exposed finishes to eliminate visual defects.
- D. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of 10 days prior to date the Work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.
1. Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
 2. Results of completed inspection will form the basis of requirements for Final Completion.

1.8 FINAL COMPLETION PROCEDURES

- A. Submittals Prior to Final Completion: Before requesting final inspection for determining Final Completion, complete the following:
1. Submit a final Application for Payment in accordance with Section 012900 "Payment Procedures."
 2. Certified List of Incomplete Items: Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
 3. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.
 4. Submit pest-control final inspection report.
 5. Submit Final Completion photographic documentation.
- B. Inspection: Submit a written request for final inspection to determine acceptance a minimum of 10 days prior to date the Work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
1. Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

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1.9 LIST OF INCOMPLETE ITEMS

- A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.
1. Organize list of spaces in sequential order, starting with exterior areas first and proceeding from lowest floor to highest floor, listed by room or space number.
 2. Organize items applying to each space by major element, including categories for ceilings, individual walls, floors, equipment, and building systems.
 3. Include the following information at the top of each page:
 - a. Project name.
 - b. Date.
 - c. Name of Architect.
 - d. Name of Contractor.
 - e. Page number.
 4. Submit list of incomplete items in the following format:
 - a. MS Excel Electronic File: Architect will return annotated file.

1.10 SUBMITTAL OF PROJECT WARRANTIES

- A. Time of Submittal: Submit written warranties on request of Architect for designated portions of the Work where warranties are indicated to commence on dates other than date of Substantial Completion, or when delay in submittal of warranties might limit Owner's rights under warranty.
- B. Partial Occupancy: Submit properly executed warranties within 15 days of completion of designated portions of the Work that are completed and occupied or used by Owner during construction period by separate agreement with Contractor.
- C. Organize warranty documents into an orderly sequence based on the table of contents of Project Manual.
- D. Warranty Electronic File: Provide warranties and bonds in PDF format. Assemble complete warranty and bond submittal package into a single electronic PDF file with bookmarks enabling navigation to each item. Provide bookmarked table of contents at beginning of document.
- E. Warranties in Paper Form:
1. Bind warranties and bonds in heavy-duty, three-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch (215-by-280-mm) paper.
 2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.

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3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.
- F. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.
 1. Use cleaning products that comply with Green Seal's GS-37, or if GS-37 is not applicable, use products that comply with the California Code of Regulations maximum allowable VOC levels.

PART 3 - EXECUTION

3.1 FINAL CLEANING

- A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
 1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:
 - a. Clean Project site of rubbish, waste material, litter, and other foreign substances.
 - b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
 - c. Rake grounds that are not planted, mulched, or paved to a smooth, even-textured surface.
 - d. Remove tools, construction equipment, machinery, and surplus material from Project site.
 - e. Remove snow and ice to provide safe access to building.
 - f. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
 - g. Remove debris and surface dust from limited-access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.

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- h. Clean flooring, removing debris, dirt, and staining; clean according to manufacturer's recommendations.
 - i. Vacuum and mop concrete.
 - j. Vacuum carpet and similar soft surfaces, removing debris and excess nap; clean according to manufacturer's recommendations if visible soil or stains remain.
 - k. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Polish mirrors and glass, taking care not to scratch surfaces.
 - l. Remove labels that are not permanent.
 - m. Wipe surfaces of mechanical and electrical equipment and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
 - n. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
 - o. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
 - p. Clean ducts, blowers, and coils if units were operated without filters during construction or that display contamination with particulate matter on inspection.
 - 1) Clean HVAC system in compliance with NADCA ACR. Provide written report on completion of cleaning.
 - q. Clean luminaires, lamps, globes, and reflectors to function with full efficiency.
 - r. Clean strainers.
 - s. Leave Project clean and ready for occupancy.
- C. Pest Control: Comply with pest control requirements in Section 015000 "Temporary Facilities and Controls." Prepare written report.
- D. Construction Waste Disposal: Comply with waste-disposal requirements in Section 015000 "Temporary Facilities and Controls."

3.2 REPAIR OF THE WORK

- A. Complete repair and restoration operations required by Section 017300 "Execution" before requesting inspection for determination of Substantial Completion.

END OF SECTION 017700

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SECTION 017839 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for Project Record Documents, including the following:
 - 1. Record Drawings.
 - 2. Record specifications.
 - 3. Record Product Data.
 - 4. Miscellaneous record submittals.
- B. Related Requirements:
 - 1. Section 017300 "Execution" for final property survey.
 - 2. Section 017700 "Closeout Procedures" for general closeout procedures.

1.3 CLOSEOUT SUBMITTALS

- A. Record Drawings: Comply with the following:
 - 1. Number of Copies: Submit three set(s) of marked-up record prints, and one PDF electronic copy.
- B. Record Specifications: Submit annotated PDF electronic files of Project's Specifications, including addenda and Contract modifications.
- C. Record Product Data: Submit annotated PDF electronic files and directories of each submittal.
 - 1. Where record Product Data are required as part of operation and maintenance manuals, submit duplicate marked-up Product Data as a component of manual.

1.4 RECORD DRAWINGS

- A. Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued.
 - 1. Preparation: Mark record prints to show the actual installation, where installation varies from that shown originally. Require individual or entity who obtained record data,

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whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.

- a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
 - b. Accurately record information in an acceptable drawing technique.
 - c. Record data as soon as possible after obtaining it.
 - d. Record and check the markup before enclosing concealed installations.
 - e. Cross-reference record prints to corresponding photographic documentation.
2. Content: Types of items requiring marking include, but are not limited to, the following:
- a. Dimensional changes to Drawings.
 - b. Revisions to details shown on Drawings.
 - c. Depths of foundations.
 - d. Locations and depths of underground utilities.
 - e. Revisions to routing of piping and conduits.
 - f. Revisions to electrical circuitry.
 - g. Actual equipment locations.
 - h. Duct size and routing.
 - i. Locations of concealed internal utilities.
 - j. Changes made by Change Order or Construction Change Directive.
 - k. Changes made following Architect's written orders.
 - l. Details not on the original Contract Drawings.
 - m. Field records for variable and concealed conditions.
 - n. Record information on the Work that is shown only schematically.
3. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
4. Mark record prints with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
5. Mark important additional information that was either shown schematically or omitted from original Drawings.
6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.
- B. Record Digital Data Files: Immediately before inspection for Certificate of Substantial Completion, review marked-up record prints with Architect. When authorized, prepare a full set of corrected digital data files of the Contract Drawings, as follows:
1. Format: Annotated PDF electronic file with comment function enabled.
 2. Incorporate changes and additional information previously marked on record prints. Delete, redraw, and add details and notations where applicable.
 3. Refer instances of uncertainty to Architect for resolution.
 4. Architect will furnish Contractor with one set of digital data files of the Contract Drawings for use in recording information.
- a. See Section 013100 "Project Management and Coordination" for requirements related to use of Architect's digital data files.

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- b. Architect will provide data file layer information. Record markups in separate layers.
- C. Format: Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
 - 1. Record Prints: Organize record prints into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
 - 2. Format: Annotated PDF electronic file with comment function enabled.
 - 3. Record Digital Data Files: Organize digital data information into separate electronic files that correspond to each sheet of the Contract Drawings. Name each file with the sheet identification. Include identification in each digital data file.
 - 4. Identification: As follows:
 - a. Project name.
 - b. Date.
 - c. Designation "PROJECT RECORD DRAWINGS."
 - d. Name of Architect.
 - e. Name of Contractor.

1.5 RECORD SPECIFICATIONS

- A. Preparation: Mark Specifications to indicate the actual product installation, where installation varies from that indicated in Specifications, addenda, and Contract modifications.
 - 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
- B. Format: Submit record specifications as annotated PDF electronic file.

1.6 RECORD PRODUCT DATA

- A. Recording: Maintain one copy of each submittal during the construction period for Project Record Document purposes. Post changes and revisions to Project Record Documents as they occur; do not wait until end of Project.
- B. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.
 - 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 - 2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
 - 3. Note related Change Orders, Record Specifications, and Record Drawings where applicable.
- C. Format: Submit Record Product Data as annotated PDF electronic file.

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1. Include Record Product Data directory organized by Specification Section number and title, electronically linked to each item of Record Product Data.

1.7 MISCELLANEOUS RECORD SUBMITTALS

- A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.
- B. Format: Submit miscellaneous record submittals as PDF electronic file.
 1. Include miscellaneous record submittals directory organized by Specification Section number and title, electronically linked to each item of miscellaneous record submittals.

1.8 MAINTENANCE OF RECORD DOCUMENTS

- A. Maintenance of Record Documents: Store Record Documents in the field office apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to Project Record Documents for Architect's reference during normal working hours.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 017839

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SECTION 024119 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Demolition and removal of selected portions of building or structure.
2. Demolition and removal of selected site elements.
3. Salvage of existing items to be reused or recycled.

B. Related Requirements:

1. Section 011000 "Summary" for restrictions on use of the premises, Owner-occupancy requirements, and phasing requirements.
2. Section 017300 "Execution" for cutting and patching procedures.

1.3 DEFINITIONS

- A. Remove: Detach items from existing construction and dispose of them off-site unless indicated to be salvaged or reinstalled.
- B. Remove and Salvage: Detach items from existing construction, in a manner to prevent damage, and store.
- C. Remove and Reinstall: Detach items from existing construction, in a manner to prevent damage, prepare for reuse, and reinstall where indicated.
- D. Existing to Remain: Leave existing items that are not to be removed and that are not otherwise indicated to be salvaged or reinstalled.
- E. Dismantle: To remove by disassembling or detaching an item from a surface, using gentle methods and equipment to prevent damage to the item and surfaces; disposing of items unless indicated to be salvaged or reinstalled.

1.4 MATERIALS OWNERSHIP

- A. Unless otherwise indicated, demolition waste becomes property of Contractor.

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- B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner.
 - 1. Carefully salvage in a manner to prevent damage and promptly return to Owner.

1.5 PREINSTALLATION MEETINGS

- A. Predemolition Conference: Conduct conference at Project site.
 - 1. Inspect and discuss condition of construction to be selectively demolished.
 - 2. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
 - 3. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
 - 4. Review areas where existing construction is to remain and requires protection.

1.6 INFORMATIONAL SUBMITTALS

- A. Proposed Protection Measures: Submit report, including Drawings, that indicates the measures proposed for protecting individuals and property, for environmental protection, for dust control. Indicate proposed locations and construction of barriers.
- B. Schedule of Selective Demolition Activities: Indicate the following:
 - 1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's building manager's on-site operations are uninterrupted.
 - 2. Interruption of utility services. Indicate how long utility services will be interrupted.
 - 3. Coordination for shutoff, capping, and continuation of utility services.
 - 4. Use of elevator and stairs.
 - 5. Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.
- C. Predemolition Photographs or Video: Show existing conditions of adjoining construction, including finish surfaces, that might be misconstrued as damage caused by demolition operations. Comply with Section 013233 "Photographic Documentation." Submit before Work begins.
- D. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.

1.7 CLOSEOUT SUBMITTALS

- A. Inventory: Submit a list of items that have been removed and salvaged.

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1.8 QUALITY ASSURANCE

- A. Refrigerant Recovery Technician Qualifications: Certified by an EPA-approved certification program.

1.9 FIELD CONDITIONS

- A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.
- B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
- C. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
- D. Hazardous Materials:
 - 1. If suspected hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.
- E. Historic Areas: Demolition and hauling equipment and other materials shall be of sizes that clear surfaces within historic spaces, areas, rooms, and openings, including temporary protection, by 12 inches (300 mm) or more.
- F. Storage or sale of removed items or materials on-site is not permitted.
- G. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
 - 1. Maintain fire-protection facilities in service during selective demolition operations.

1.10 COORDINATION

- A. Arrange selective demolition schedule so as not to interfere with Owner's operations.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Standards: Comply with ASSE A10.6 and NFPA 241.

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PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that utilities have been disconnected and capped before starting selective demolition operations.
- B. Survey of Existing Conditions: Record existing conditions by use of preconstruction photographs or video.
 - 1. Comply with requirements specified in Section 013233 "Photographic Documentation."
 - 2. Inventory and record the condition of items to be removed and salvaged. Provide photographs or video of conditions that might be misconstrued as damage caused by salvage operations.
 - 3. Before selective demolition or removal of existing building elements that will be reproduced or duplicated in final Work, make permanent record of measurements, materials, and construction details required to make exact reproduction.

3.2 PREPARATION

- A. Refrigerant: Before starting demolition, remove refrigerant from mechanical equipment according to 40 CFR 82 and regulations of authorities having jurisdiction.

3.3 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

- A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.
- B. Existing Services/Systems to Be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and seal or cap off utility services and mechanical/electrical systems serving areas to be selectively demolished.
 - 1. Arrange to shut off utilities with utility companies.
 - 2. If services/systems are required to be removed, relocated, or abandoned, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
 - 3. Disconnect, demolish, and remove fire-suppression systems, plumbing, and HVAC systems, equipment, and components indicated on Drawings to be removed.
 - a. Piping to Be Removed: Remove portion of piping indicated to be removed and cap or plug remaining piping with same or compatible piping material.
 - b. Piping to Be Abandoned in Place: Drain piping and cap or plug piping with same or compatible piping material and leave in place.
 - c. Equipment to Be Removed: Disconnect and cap services and remove equipment.
 - d. Equipment to Be Removed and Reinstalled: Disconnect and cap services and remove, clean, and store equipment; when appropriate, reinstall, reconnect, and make equipment operational.
 - e. Equipment to Be Removed and Salvaged: Disconnect and cap services and remove equipment and deliver to Owner.

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- f. Ducts to Be Removed: Remove portion of ducts indicated to be removed and plug remaining ducts with same or compatible ductwork material.
- g. Ducts to Be Abandoned in Place: Cap or plug ducts with same or compatible ductwork material and leave in place.

3.4 PROTECTION

- A. Temporary Protection: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
 - 1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
 - 2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
 - 3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
 - 4. Cover and protect furniture, furnishings, and equipment that have not been removed.
 - 5. Comply with requirements for temporary enclosures, dust control, heating, and cooling specified in Section 015000 "Temporary Facilities and Controls."
- B. Temporary Shoring: Design, provide, and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.
 - 1. Strengthen or add new supports when required during progress of selective demolition.
- C. Remove temporary barricades and protections where hazards no longer exist.

3.5 SELECTIVE DEMOLITION, GENERAL

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
 - 1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
 - 2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping. Temporarily cover openings to remain.
 - 3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
 - 4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden

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space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.

5. Maintain fire watch during and for at least two hours after flame-cutting operations.
6. Maintain adequate ventilation when using cutting torches.
7. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
8. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
9. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
10. Dispose of demolished items and materials promptly.

B. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

C. Work in Historic Areas: Selective demolition may be performed only in areas of Project that are not designated as historic. In historic spaces, areas, and rooms, or on historic surfaces, the terms "demolish" or "remove" shall mean historic "removal" or "dismantling" as specified in Section 024296 "Historic Removal and Dismantling."

D. Removed and Salvaged Items:

1. Clean salvaged items.
2. Pack or crate items after cleaning. Identify contents of containers.
3. Store items in a secure area until delivery to Owner.
4. Protect items from damage during transport and storage.

E. Removed and Reinstalled Items:

1. Clean and repair items to functional condition adequate for intended reuse.
2. Pack or crate items after cleaning and repairing. Identify contents of containers.
3. Protect items from damage during transport and storage.
4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.

F. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.

3.6 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

A. Plaster: Saw cut plaster with small diameter, thin kerf, diamond toothed circular cutting blade. Do not use Sawzall or reciprocating blade as this will vibrate plaster and lath too much and cause failure of adjacent plaster keys to remain. Cut plaster no more than necessary to install work and in such a way that permits installation of blocking, wood lath and plaster finishes to match adjacent finish when area is ready to be patched.

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3.7 DISPOSAL OF DEMOLISHED MATERIALS

- A. Remove demolition waste materials from Project site and dispose of them in an EPA-approved construction and demolition waste landfill acceptable to authorities having jurisdiction.
 - 1. Do not allow demolished materials to accumulate on-site.
 - 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- B. Burning: Do not burn demolished materials.

3.8 CLEANING

- A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION 024119

SECTION 024296 - HISTORIC REMOVAL AND REINSTALLATION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Historic treatment procedures for removal and dismantling work for designated historic spaces, areas, rooms, and surfaces and the following specific work:
 - a. Removal and reinstallation of wood trim to allow for installation of electrical wiring and devices indicated.
 - b. Salvage of existing items to be reused or recycled.

B. Related Requirements:

1. Section 013591 "Historic Treatment Procedures" for general historic treatment requirements.

1.2 DEFINITIONS

- A. Dismantle: To disassemble or detach a historic item from a surface, or a nonhistoric item from a historic surface, using gentle methods and equipment to prevent damage to historic items and surfaces; disposing of items unless indicated to be salvaged or reinstalled.
- B. Existing to Remain: Existing items that are not to be removed or dismantled, except to the degree indicated for performing required Work.
- C. Remove: To take down or detach a nonhistoric item located within a historic space, area, or room, using methods and equipment to prevent damage to historic items and surfaces; disposing of items unless indicated to be salvaged or reinstalled.
- D. Retain: To keep an element or detail secure and intact.
- E. Salvage: To protect removed or dismantled items and store to reinstall.
- F. Reinstall: To reinstall historic items in the manner and condition that they existed prior to removal. Includes attachment, hole filling and finishing to match.

1.3 PRECONSTRUCTION MEETINGS

A. Preconstruction Conference(s): Conduct conference(s) at Project site.

1. Review minutes of Preliminary Historic Treatment Conference that pertain to removal and dismantling procedures and protection of historic areas and surfaces.

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2. Review list of items indicated to be removed, salvaged and reinstalled.
3. Verify qualifications of personnel assigned to perform removal and dismantling.
4. Inspect and discuss condition of each construction type to be removed and reinstalled.
5. Review requirements of other work that depends on condition of substrates exposed by removal and dismantling work.
6. Review methods and procedures related to removal and reinstalling work, including, but not limited to, the following:
 - a. Historic removal and dismantling specialist's personnel, equipment, and facilities needed to make progress and avoid delays.
 - b. Materials, material application, sequencing, tolerances, and required clearances.
 - c. Fire prevention.
 - d. Coordination with building owner.

1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Statements: For historic removal and dismantling specialist and historic removal and dismantling specialist's field supervisors.
- B. Preconstruction Documentation: Show preexisting conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by Contractor's removal and dismantling operations.
- C. Removal and Dismantling Historic Treatment Program: Submit 15 days before work begins.
- D. List of Items Indicated To Be Salvaged: Prepare a list of items indicated on Drawings to be salvaged for Owner's use or for reinstallation. Submit 15 days before preconstruction conference.
- E. Inventory of Salvaged Items: After removal or dismantling Work is complete, submit a list of items that have been salvaged.
 1. Include item description, item condition, number of items if more than one of a type, and tag number. Include photo of item in original location.
 2. As work proceeds, include on the inventory items that were indicated to be salvaged and items of historic importance discovered during the work. Document reasons, if any, why an item indicated to be salvaged was not salvaged.

1.5 QUALITY ASSURANCE

- A. Historic Removal and Dismantling Specialist Qualifications: A qualified historic treatment specialist. General selective demolition experience is insufficient experience for historic removal and dismantling work.
- B. Removal and Dismantling Historic Treatment Program: Prepare a written, detailed description of materials, methods, equipment, and sequence of operations to be used for each phase of removal and dismantling work, including protection of surrounding and substrate materials and Project site.

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1. Dust and Noise Control: Include locations of proposed temporary dust- and noise-control partitions and means of egress from occupied areas coordinated with continuing on-site operations and other known work in progress.
2. Debris Hauling: Include plans clearly marked to show debris-hauling routes, turning radii, and locations and details of temporary protective barriers.

1.6 MOCKUPS

- A. Prepare mockups of specific historic removal and dismantling procedures specified in this Section to demonstrate aesthetic effects and to set quality standards for materials and execution.
 1. Typical Removal Work, Limited Mockups: Remove one full length of each type of trim to be removed and reinstalled.
 2. Typical Reinstallation Work, Limited Mockups: Reinstall one full length of each type of trim to be removed and reinstalled.
 3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
- B. Regulatory Requirements: Comply with notification regulations of authorities having jurisdiction before beginning removal and dismantling work. Comply with hauling and disposal regulations of authorities having jurisdiction.

1.7 FIELD CONDITIONS

- A. Conditions existing at time of inspection for bidding purposes will be maintained by Owner.
 1. Before removal and dismantling, Owner will remove the following items:
 - a. Furnishings will be removed from walls along which removal and reinstallation work is to be undertaken.
- B. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with removal and dismantling work.
- C. Hazardous Materials:
 1. It is unknown whether hazardous materials will be encountered in the Work.
 - a. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Owner will remove hazardous materials under a separate contract.
 - 1) In the case of asbestos, stop work in the area of potential hazard, shut off fans and other air handlers ventilating the area, and rope off area until the questionable material is identified. Resume work in the area of concern after safe working conditions are verified.

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PART 2 - PRODUCTS - (Not Used)

PART 3 - EXECUTION

3.1 HISTORIC REMOVAL AND DISMANTLING EQUIPMENT

- A. Removal Equipment: Use manual, handheld tools. Handheld power tools may be permitted on a case-by-case basis with approval by Architect.
- B. Dismantling Equipment: Use manual, handheld tools, except as follows or otherwise approved by Architect on a case-by-case basis:
 - 1. Handheld power tools are permitted only as submitted in the historic treatment program. They must be adjustable so as to penetrate or cut only the thickness of material being removed.
 - 2. Pry bars more than 18 inches (450 mm) long and hammers weighing more than 2 lb (0.9 kg) are not permitted for dismantling work.
 - 3. Knives, saws and other cutting tools must make use of new blades and be replaced regularly to maintain optimal cutting performance.

3.2 EXAMINATION

- A. Preparation for Removal and Dismantling: Examine construction to be removed or dismantled to determine best methods to safely and effectively perform removal and dismantling work. Examine adjacent work to determine what protective measures are necessary. Make explorations, probes, and inquiries as necessary to determine condition of construction to be removed or dismantled and location of utilities and services to remain that may be hidden by construction that is to be removed or dismantled.
 - 1. Verify that affected utilities are disconnected and capped.
 - 2. Inventory and record the condition of items to be removed and dismantled for reinstallation or salvage. Enter this information on the inventory of salvaged items.
 - 3. Before removal or dismantling of existing building elements that will be reinstalled, make permanent record of measurements, materials, and construction details required to reinstall item to match condition prior to removal.
- B. Survey of Existing Conditions: Record existing conditions by use of preconstruction photographs and preconstruction video recordings.
 - 1. Comply with requirements specified in Section 013233 "Photographic Documentation."
- C. Perform surveys as the Work progresses to detect hazards resulting from historic removal and dismantling procedures.

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3.3 HISTORIC REMOVAL AND DISMANTLING

- A. General: Have removal and dismantling work performed by a qualified historic removal and dismantling specialist. Ensure that historic removal and dismantling specialist's field supervisors are present when removal and dismantling work begins and during its progress.
- B. Comply with requirements in Section 013591 "Historic Treatment Procedures" for identifying and storing historic items.
- C. Perform work according to the historic treatment program and approved mockup(s).
 - 1. Limit removal and dismantling to only items required for installation of electrical wiring and devices.
 - 2. Provide supports or reinforcement for existing construction that becomes temporarily weakened by removal and dismantling work, until the Project Work is completed unless otherwise indicated.
 - 3. Perform cutting by hand or with small power tools as permitted by Architect wherever possible. Cut joints separating pieces to be removed from adjacent pieces with a sharp utility knife.
 - 4. Remove or punch nails through in such a manor that does not split, gouge, dent or otherwise damage the historic trim to be removed.
 - 5. Do not operate air compressors inside building unless approved by Architect in each case.
 - 6. Do not drill or cut columns, beams, joints, girders, structural slabs, or other structural supporting elements, without having Contractor's professional engineer's written approval for each location before such work is begun.
 - 7. Dispose of removed and dismantled items off-site unless indicated to be salvaged or reinstalled.
- D. Unacceptable Equipment: Keep equipment that is not permitted for historic removal or dismantling work away from the vicinity where such work is being performed.
- E. Removing and Dismantling Items on or Near Historic Surfaces:
 - 1. Protect historic surface from contact with or damage by tools.
 - 2. Wherever possible, unfasten items in the opposite order from which they were installed.
 - 3. Support each item as it becomes loosened to prevent stress and damage to the historic surface.
 - 4. Dismantle anchorages.
- F. Anchorages:
 - 1. Remove anchorages associated with removed items.
 - 2. Dismantle anchorages associated with dismantled items.
 - 3. In nonhistoric surfaces, patch holes created by anchorage removal or dismantling according to the requirements for new work.
 - 4. In historic surfaces, patch or repair holes created by anchorage removal or dismantling according to Section that is specific to the historic surface being patched.

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3.4 HISTORIC REINSTALLATION

- A. General: Have reinstallation work performed by a qualified historic specialist. Ensure that historic reinstallation specialist's field supervisors are present when reinstallation work begins and during its progress.
- B. Comply with requirements in Section 013591 "Historic Treatment Procedures" for identifying and storing historic items.
- C. Perform work according to the historic treatment program and approved mockup(s).
 - 1. Inspect substrates and other conditions prior to commencing reinstallation work and correct all conditions that would prevent items from being reinstalled to match the condition prior to removal.
 - 2. Coordinate work with electrician to ensure area is ready for permanent reinstallation of millwork.
 - 3. Loose fit all trim to be reinstalled prior to anchoring to ensure proper reinstallation is possible.
 - 4. Reattach using finish nails or other appropriate anchors. Review with architect and owner prior to reinstallation.
 - 5. Set, fill, sand and prime all re-attachment points. Caulk joints between parallel trim pieces with minimal dimension caulk joint. Wipe excess caulk and provide smooth, finished caulk joint that does not alter the intended aesthetic relationship between adjacent trim elements.
 - 6. Repaint entire lengths of trim elements that were removed and reinstalled and adjacent elements that were impacted by removal and reinstallation operations to match the existing.

END OF SECTION 024296

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SECTION 029200 - LAWNS AND GRASSES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Topsoil and Seeding for restoration of existing disturbed areas.

1.3 DEFINITIONS

- A. Finish Grade: Elevation of finished surface of planting soil.
- B. Manufactured Soil: Soil produced off-site by homogeneously blending mineral soils or sand with stabilized organic soil amendments to produce topsoil or planting soil.
- C. Planting Soil: Native or imported topsoil, manufactured topsoil, or surface soil modified to become topsoil; mixed with soil amendments.
- D. Subgrade: Surface or elevation of subsoil remaining after completing excavation, or top surface of a fill or backfill immediately beneath planting soil.
- E. Subsoil: All soil beneath the topsoil layer of the soil profile, and typified by the lack of organic matter and soil organisms.

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Certification of grass seed, including botanical and common names, percentage by weight of each species, and production date.
- C. Product certificates for soil amendments and fertilizers.
- D. Topsoil sample, approximately 1 lb.

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1.5 QUALITY ASSURANCE

- A. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when planting is in progress.
- B. Installer Qualifications: Require installers to demonstrate experience at 5 similar projects within the past three years.
- C. Topsoil Analysis: Furnish soil analysis indicating appropriate seed type.

1.6 MAINTENANCE SERVICE

- A. Initial Lawn Maintenance Service: Provide full maintenance by skilled employees of landscape Installer. Maintain as required in Part 3. Begin maintenance immediately after each area is planted and continue until acceptable lawn is established, but for not less than the following periods:
 - 1. Seeded Lawns: 120 days from date of Substantial Completion.
 - a. When initial maintenance period has not elapsed before end of planting season, or if lawn is not fully established, continue maintenance during next planting season.

PART 2 - PRODUCTS

2.1 SEED

- A. Grass Seed: Fresh, clean, dry, new-crop seed complying with AOSA's "Journal of Seed Technology; Rules for Testing Seeds" for purity and germination tolerances.
- B. Seed Species: State-certified seed of grass species, as follows:
 - 1. Sun and Partial Shade to Match Character of Existing Lawn: As appropriate for soil type.

2.2 TOPSOIL

- A. Topsoil: ASTM D 5268, pH range of 5.5 to 7, free of stones 1 inch (25 mm) or larger in any dimension and other extraneous materials harmful to plant growth.
 - 1. Topsoil Source: Reuse surface soil stockpiled on-site. Verify suitability of stockpiled surface soil to produce topsoil. Clean surface soil of roots, plants, sod, stones, clay lumps, and other extraneous materials harmful to plant growth.
 - a. Supplement with imported or manufactured topsoil from off-site sources when quantities are insufficient. Do not obtain from bogs or marshes.

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2.3 INORGANIC SOIL AMENDMENTS

- A. Lime: ASTM C 602, agricultural limestone containing a minimum of 80 percent calcium carbonate equivalent.
- B. Sulfur: Granular, biodegradable, containing a minimum of 90 percent sulfur, with a minimum of 99 percent passing through No. 6 (3.35-mm) sieve and a maximum of 10 percent passing through No. 40 (0.425-mm) sieve.
- C. Perlite: Horticultural perlite, soil amendment grade.
- D. Sand: Clean, washed, natural or manufactured, free of toxic materials.

2.4 ORGANIC SOIL AMENDMENTS

- A. Compost: Well-composted, stable, and weed-free organic matter, pH range of 5.5 to 8; moisture content 35 to 55 percent by weight; 100 percent passing through 3/4-inch (19-mm) sieve; soluble salt content of 5 to 10 decisiemens/m.
- B. Peat: Sphagnum peat moss, partially decomposed, finely divided or granular texture, with a pH range of 3.4 to 4.8.

2.5 FERTILIZER

- A. Commercial Fertilizer: Commercial-grade complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea formaldehyde, phosphorous, and potassium.

PART 3 - EXECUTION

3.1 LAWN PREPARATION

- A. Unchanged Subgrades: If lawns are to be planted in areas unaltered or undisturbed by excavating, grading, or surface-soil stripping operations, prepare surface soil as follows:
 - 1. Remove existing grass, vegetation, and turf in area to be seeded. Do not mix into surface soil.
 - 2. Loosen surface soil to a depth of at least 6 inches (150 mm). Apply soil amendments and fertilizers according to planting soil mix proportions and mix thoroughly into top 6 inches (150 mm) of soil. Till soil to a homogeneous mixture of fine texture.
 - a. Apply fertilizer directly to surface soil before loosening.
 - 3. Remove stones larger than 2 inches (50 mm) in any dimension and sticks, roots, trash, and other extraneous matter.
 - 4. Legally dispose of waste material, including grass, vegetation, and turf, off Owner's property.

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- B. Finish Grading: Grade planting areas to a smooth, uniform surface plane with loose, uniformly fine texture. Grade to within plus or minus 1/2 inch (13 mm) of finish elevation. Roll and rake, remove ridges, and fill depressions to meet finish grades. Limit finish grading to areas that can be planted in the immediate future.
- C. Moisten prepared lawn areas before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.
- D. Before planting, restore areas if eroded or otherwise disturbed after finish grading.

3.2 SEEDING

- A. Do not broadcast or drop seed when wind velocity exceeds 5 mph (8 km/h). Evenly distribute seed by sowing equal quantities in two directions at right angles to each other.
- B. Sow seed at a total rate as recommended by manufacturer or supplier.
- C. Rake seed lightly into top 1/8 inch (3 mm) of soil, roll lightly, and water with fine spray.
- D. Protect seeded areas with slopes not exceeding 1:6 by spreading straw mulch. Spread uniformly to form a continuous blanket in loose depth over seeded areas. Spread by hand, blower, or other suitable equipment.

3.3 LAWN MAINTENANCE

- A. Maintain and establish lawn by watering, fertilizing, weeding, mowing, trimming, replanting, and other operations. Roll, regrade, and replant bare or eroded areas and remulch to produce a uniformly smooth lawn. Provide materials and installation the same as those used in the original installation.
- B. Mow lawn as soon as top growth is tall enough to cut. Repeat mowing to maintain specified height without cutting more than 1/3 of grass height. Remove no more than 1/3 of grass-leaf growth in initial or subsequent mowings.

3.4 SATISFACTORY LAWNS

- A. At end of maintenance period, a healthy, well-rooted, even-colored, viable lawn has been established, free of weeds, open joints, bare areas, and surface irregularities.
- B. Use specified materials to reestablish lawns that do not comply with requirements and continue maintenance until lawns are satisfactory.

END OF SECTION 029200

SECTION 033000 - CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes cast-in-place concrete, including formwork, reinforcement, concrete materials, mixture design, placement procedures, and finishes.

1.3 DEFINITIONS

- A. Cementitious Materials: Portland cement alone or in combination with one or more of the following: blended hydraulic cement, fly ash, slag cement, other pozzolans, and silica fume; materials subject to compliance with requirements.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of manufactured material and product indicated.
- B. Design Mixtures: For each concrete mixture. Submit alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.
 - 1. Indicate amounts of mixing water to be withheld for later addition at Project site.
- C. Steel Reinforcement Shop Drawings: Details of fabrication, bending, and placement, prepared according to ACI 315, "Details and Detailing of Concrete Reinforcement." Include material, grade, bar schedules, stirrup spacing, bent bar diagrams, arrangement, and supports of concrete reinforcement. Include special reinforcement required for openings through concrete structures.

1.5 INFORMATIONAL SUBMITTALS

- A. Material Certificates: For each of the following, signed by manufacturers:
 - 1. Cementitious materials.
 - 2. Steel reinforcement and accessories.
 - 3. Curing compounds.
 - 4. Bonding agents.

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5. Vapor retarders.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: An experienced installer who has completed concrete Work similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
- B. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.
 1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities."

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Steel Reinforcement: Deliver, store, and handle steel reinforcement to prevent bending and damage.

PART 2 - PRODUCTS

2.1 CONCRETE, GENERAL

- A. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:
 1. ACI 301, "Specification for Structural Concrete."
 2. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."

2.2 FORM-FACING MATERIALS

- A. Rough-Formed Finished Concrete: Plywood, lumber, metal, or another approved material. Provide lumber dressed on at least two edges and one side for tight fit.

2.3 STEEL REINFORCEMENT

- A. Reinforcing Bars: ASTM A 615/A 615M, Grade 60 (Grade 420), deformed.
- B. Plain-Steel Welded Wire Fabric: ASTM A 185, fabricated from as-drawn steel wire into flat sheets.

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2.4 REINFORCEMENT ACCESSORIES

- A. Joint Dowel Bars: ASTM A 615/A 615M, Grade 60 (Grade 420), plain-steel bars, cut true to length with ends square and free of burrs.
- B. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded-wire fabric in place. Manufacture bar supports from steel wire, plastic, or precast concrete according to CRSI's "Manual of Standard Practice," of greater compressive strength than concrete.

2.5 CONCRETE MATERIALS

- A. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, obtain aggregate from single source, and obtain admixtures from single source from single manufacturer.
- B. Cementitious Materials:
 - 1. Portland Cement: ASTM C 150/C 150M, Type II.
- C. Normal-Weight Aggregates: ASTM C 33/C 33M, uniformly graded, and as follows:
 - 1. Class: Severe weathering region, but not less than 3S.
 - 2. Nominal Maximum Aggregate Size: 3/4 inch.
- D. Admixtures: AS Admixtures certified by manufacturer to contain no more than 0.1 percent water-soluble chloride ions by mass of cementitious material and to be compatible with other admixtures and cementitious materials. Do not use admixtures containing calcium chloride.
- E. Air-Entraining Admixture: ASTM C 260/C 260M.
- F. Water-Reducing Admixture: ASTM C 494, Type A.
- G. Water: ASTM C 94/C 94M and potable.

2.6 VAPOR RETARDERS

- A. Sheet Vapor Retarder: Polyethylene sheet, ASTM D 4397, not less than 10 mils thick.

2.7 CURING MATERIALS

- A. Clear, Waterborne, Membrane-Forming Curing and Sealing Compound: ASTM C 1315, Type 1, Class A.
 - 1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:

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- a. Klear-Kote Cure-Sealer-Hardener, 30 percent solids; Burke Group, LLC (The).
- b. Polyseal WB; ChemMasters.
- c. UV Safe Seal; Lambert Corporation.
- d. Lumiseal WB Plus; L&M Construction Chemicals, Inc.

2.8 RELATED MATERIALS

- A. Expansion- and Isolation-Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber.
- B. Bonding Agent: ASTM C 1059/C 1059M, Type II, nonredispersible, acrylic emulsion or styrene butadiene.

2.9 CONCRETE MIXTURES, GENERAL

- A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301.
 1. Use a qualified independent testing agency for preparing and reporting proposed mixture designs based on laboratory trial mixtures.
- B. Cementitious Materials: For concrete exposed to deicers, limit percentage, by weight, of cementitious materials other than portland cement according to ACI 301 requirements.
- C. Limit water-soluble, chloride-ion content in hardened concrete to 0.15 percent by weight of cement.
- D. Admixtures: Use admixtures according to manufacturer's written instructions.
 1. Use water-reducing admixture in concrete, as required, for placement and workability.
 2. Use water-reducing and -retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.

2.10 CONCRETE MIXTURES FOR BUILDING ELEMENTS

- A. Footings and Slabs: Normal-weight concrete.
 1. Compressive Strength (28 Days): 4000 psi.
 2. Maximum Slump: 4 inches.
 3. Air Content: Add air-entraining admixture at manufacturer's prescribed rate to result in concrete at point of placement having an air content of 2 to 4 percent, unless otherwise indicated.

2.11 FABRICATING REINFORCEMENT

- A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

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2.12 CONCRETE MIXING

- A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M, and furnish batch ticket information.

PART 3 - EXECUTION

3.1 FORMWORK INSTALLATION

- A. Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads.
- B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.
- C. Construct forms tight enough to prevent loss of concrete mortar.
- D. Construct forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast-concrete surfaces. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical.
 - 1. Kerf wood inserts for forming keyways, reglets, recesses, and the like, for easy removal.
 - 2. Do not use rust-stained steel form-facing material.
- E. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces. Provide and secure units to support screed strips; use strike-off templates or compacting-type screeds.
- F. Form openings, chases, offsets, sinkages, keyways, reglets, blocking, screeds, and bulkheads required in the Work. Determine sizes and locations from trades providing such items.
- G. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.
- H. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.
- I. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.

3.2 EMBEDDED ITEM INSTALLATION

- A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.

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1. Install anchor bolts, accurately located, to elevations required.

3.3 REMOVING AND REUSING FORMS

- A. General: Formwork for sides of beams, walls, columns, and similar parts of the Work that does not support weight of concrete may be removed after cumulatively curing at not less than 50 deg F (10 deg C) for 24 hours after placing concrete. Concrete has to be hard enough to not be damaged by form-removal operations, and curing and protection operations need to be maintained.

3.4 SHORING AND RESHORING INSTALLATION

- A. Comply with ACI 318 (ACI 318M), ACI 301 (ACI 301M), and recommendations in ACI 347R for design, installation, and removal of shoring and reshoring.
 1. Do not remove shoring or reshoring until measurement of slab tolerances is complete.
- B. Plan sequence of removal of shores and reshore to avoid damage to concrete. Locate and provide adequate reshoring to support construction without excessive stress or deflection.

3.5 VAPOR-RETARDER INSTALLATION

- A. Sheet Vapor Retarders: Place, protect, and repair sheet vapor retarder according to ASTM E 1643 and manufacturer's written instructions.

3.6 STEEL REINFORCEMENT INSTALLATION

- A. General: Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.
 1. Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing concrete.
- B. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials that reduce bond to concrete.
- C. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover. Do not tack weld crossing reinforcing bars.
- D. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.
- E. Install welded-wire fabric in longest practicable lengths on bar supports spaced to minimize sagging. Lap edges and ends of adjoining sheets at least one mesh spacing. Offset laps of adjoining sheet widths to prevent continuous laps in either direction. Lace overlaps with wire.

3.7 CONCRETE PLACEMENT

- A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections are completed.
- B. Before placing concrete, water may be added at Project site, subject to limitations of ACI 301.
- C. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete is placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation.
- D. Deposit concrete in forms in horizontal layers no deeper than 24 inches and in a manner to avoid inclined construction joints. Place each layer while preceding layer is still plastic, to avoid cold joints.
 - 1. Consolidate placed concrete with mechanical vibrating equipment. Use equipment and procedures for consolidating concrete recommended by ACI 309R.
 - 2. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations no farther than the visible effectiveness of the vibrator. Place vibrators to rapidly penetrate placed layer and at least 6 inches into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mix constituents to segregate.
- E. Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
 - 1. When air temperature has fallen to or is expected to fall below 40 deg F, uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 deg F and not more than 80 deg F at point of placement.
 - 2. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
 - 3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators, unless otherwise specified and approved in mix designs.
- F. Hot-Weather Placement: Place concrete according to recommendations in ACI 305R and as follows, when hot-weather conditions exist:
 - 1. Cool ingredients before mixing to maintain concrete temperature below 90 deg F at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
 - 2. Cover steel reinforcement with water-soaked burlap so steel temperature will not exceed ambient air temperature immediately before embedding in concrete.
 - 3. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade moisture uniform without standing water, soft spots, or dry areas.

3.8 FINISHING FORMED SURFACES

- A. Rough-Formed Finish: As-cast concrete texture imparted by form-facing material with tie holes and defects repaired and patched. Remove fins and other projections that exceed ACI 347R limits for class of surface specified.

3.9 FINISHING FLOORS AND SLABS

- A. General: Comply with ACI 302.1R recommendations for screeding, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.
- B. Trowel Finish: After applying float finish, apply first troweling and consolidate concrete by hand or power-driven trowel. Continue troweling passes and restraighten until surface is free of trowel marks and uniform in texture and appearance. Grind smooth any surface defects that would telegraph through applied coatings or floor coverings.
 - 1. Apply a trowel finish to surfaces exposed to view or covered by other finishes.
 - 2. Finish surfaces to the following tolerances, measured within 24 hours according to ASTM E 1155 (ASTM E 1155M), for a randomly trafficked floor surface:
 - a. Specified overall values of flatness, F(F) 35; and of levelness, F(L) 25; with minimum local values of flatness, F(F) 24; and of levelness, F(L) 17; for slabs-on-grade.

3.10 MISCELLANEOUS CONCRETE ITEM INSTALLATION

- A. Filling In: Fill in holes and openings left in concrete structures after work of other trades is in place unless otherwise indicated. Mix, place, and cure concrete, as specified, to blend with in-place construction. Provide other miscellaneous concrete filling indicated or required to complete the Work.
- B. Curbs: Provide monolithic finish to interior curbs by stripping forms while concrete is still green and by steel-troweling surfaces to a hard, dense finish with corners, intersections, and terminations slightly rounded.
- C. Equipment Bases and Foundations: Provide machine and equipment bases and foundations as shown on Drawings. Set anchor bolts for machines and equipment at correct elevations, complying with diagrams or templates of manufacturer furnishing machines and equipment.

3.11 CONCRETE PROTECTING AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 305R for hot-weather protection during curing.
- B. Unformed Surfaces: Begin curing immediately after finishing concrete. Cure unformed surfaces, including floors and slabs, concrete floor toppings, and other surfaces, as follows:

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1. Curing and Sealing Compound: Apply uniformly to floors and slabs indicated in a continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Repeat process 24 hours later and apply a second coat. Maintain continuity of coating and repair damage during curing period.

3.12 CONCRETE SURFACE REPAIRS

- A. Defective Concrete: Repair and patch defective areas when approved by Engineer. Remove and replace concrete that cannot be repaired and patched to Engineer's approval.
- B. Patching Mortar: Mix dry-pack patching mortar, consisting of 1 part Portland cement to 2-1/2 parts fine aggregate passing a No. 16 sieve, using only enough water for handling and placing.
- C. Repairing Formed Surfaces: Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycombs, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning.
 1. Immediately after form removal, cut out honeycombs, rock pockets, and voids more than 1/2 inch in any dimension to solid concrete but not less than 1 inch in depth. Make edges of cuts perpendicular to concrete surface. Clean, dampen with water, and brush-coat holes and voids with bonding agent. Fill and compact with patching mortar before bonding agent has dried. Fill form-tie voids with patching mortar or cone plugs secured in place with bonding agent.
 2. Repair defects on surfaces exposed to view by blending white portland cement and standard portland cement so that, when dry, patching mortar matches surrounding color. Patch a test area at inconspicuous locations to verify mixture and color match before proceeding with patching. Compact mortar in place and strike off slightly higher than surrounding surface.
 3. Repair defects on concealed formed surfaces that affect concrete's durability and structural performance as determined by Engineer.
- D. Repairing Unformed Surfaces: Test unformed surfaces, such as floors and slabs, for finish and verify surface tolerances specified for each surface. Correct low and high areas. Test surfaces sloped to drain for trueness of slope and smoothness; use a sloped template.
 1. Repair finished surfaces containing defects. Surface defects include spalls, popouts, honeycombs, rock pockets, crazing and cracks in excess of 0.01 inch (0.25 mm) wide or that penetrate to reinforcement or completely through unreinforced sections regardless of width, and other objectionable conditions.
 2. After concrete has cured at least 14 days, correct high areas by grinding.
 3. Correct localized low areas during or immediately after completing surface finishing operations by cutting out low areas and replacing with patching mortar. Finish repaired areas to blend into adjacent concrete.
 4. Correct other low areas scheduled to receive floor coverings with a repair underlayment. Prepare, mix, and apply repair underlayment and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface. Feather edges to match adjacent floor elevations.

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5. Repair defective areas, except random cracks and single holes 1 inch (25 mm) or less in diameter, by cutting out and replacing with fresh concrete. Remove defective areas with clean, square cuts and expose steel reinforcement with at least a 3/4-inch (19-mm) clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding agent. Mix patching concrete of same materials and mixture as original concrete, except without coarse aggregate. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.
 6. Repair random cracks and single holes 1 inch (25 mm) or less in diameter with patching mortar. Groove top of cracks and cut out holes to sound concrete and clean off dust, dirt, and loose particles. Dampen cleaned concrete surfaces and apply bonding agent. Place patching mortar before bonding agent has dried. Compact patching mortar and finish to match adjacent concrete. Keep patched area continuously moist for at least 72 hours.
- E. Perform structural repairs of concrete, subject to Engineer's approval, using epoxy adhesive and patching mortar.
- F. Repair materials and installation not specified above may be used, subject to Engineer's approval.

END OF SECTION 033000

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SECTION 049010 - MASONRY RESTORATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes restoration and cleaning of masonry elements as follows:
 - 1. Cleaning exposed masonry surfaces
 - 2. Repointing mortar joints
 - 3. Rebuilding brick and stone masonry

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated. Include recommendations for application and use. Include test data substantiating that products comply with requirements.
- B. Samples for Verification: Before erecting mockup, submit samples of the following:
 - 1. Each type of pointing mortar in the form of sample mortar strips, 6 inches (150 mm) long by 1/2 inch (13 mm) wide, set in aluminum or plastic channels.
 - a. Include with each sample a list of ingredients with proportions of each. Identify sources, both supplier and quarry, of each type of sand and brand names of cementitious materials and pigments if any.

1.4 QUALITY ASSURANCE

- A. Masonry Restoration Qualifications: The contractor or subcontractor performing the work of this section shall demonstrate the following minimum experience:
 - 1. The Contractor or Subcontractor performing the work of this section must, within the last five (5) years, have successfully completed in a timely fashion at least four (4) projects similar in scope and type to the work required by this section.
- B. Preconstruction Testing Service: Engage a qualified independent testing agency to test the following. Provide test specimens and assemblies as indicated.
 - 1. Mortar Analysis: Provide analysis and replication mortars of the original mortar for each of the following:
 - a. Pointing Mortar

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1) 2 samples from stone foundation at house

- C. Source Limitations: Obtain each type of material for masonry restoration (face brick, cement, sand, etc.) from one source with resources to provide materials of consistent quality in appearance and physical properties.
- D. Mockups: Prepare field samples for restoration methods and cleaning procedures to demonstrate effects and qualities of materials and execution. Use materials and methods proposed for completed Work and prepare mockups on existing walls.
1. Locate mockups on the building where directed by Architect.
 2. Masonry Repair: Prepare mock-up samples for each type of patch and repair condition in-situ at locations indicated by Architect.
 3. Repointing: Prepare two separate sample areas approximately 36 inches (900 mm) high by 36 inches (900 mm) wide for each type of repointing required; 1 for demonstrating methods and quality of workmanship expected in removing mortar from joints and the other for demonstrating quality of materials and workmanship expected in pointing mortar joints.
 4. Notify Architect 7 days in advance of the dates and times when samples will be prepared.
 5. Obtain Architect's approval of mockups before starting the remainder of masonry restoration and cleaning.
 6. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver other materials to Project site in manufacturer's original and unopened containers, labeled with manufacturer's name and type of products.
- B. Store mortar materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.
- C. Store hydrated lime in manufacturer's original and unopened containers. Discard lime if containers have been damaged or have been opened for more than two days.
- D. Store sand where grading and other required characteristics can be maintained and contamination avoided.

1.6 PROJECT CONDITIONS

- A. Repoint mortar joints and repair masonry only when air temperature is between and 40 and 90 deg F (4 and 32 deg C) and is predicted to remain so for at least 7 days after completion of work.
- B. Hot-Weather Requirements: Protect masonry repair and mortar-joint pointing when temperature and humidity conditions produce excessive evaporation of water from mortar and repair materials. Provide artificial shade and wind breaks and use cooled materials as required. Do not apply mortar to substrates with temperatures of 90 deg F (32 deg C) and above.

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- C. Patch masonry only when air and surface temperatures are between and 55 and 100 deg F (13 and 38 deg C) and are predicted to remain above 55 deg F (13 deg C) for at least 7 days after completion of work. On days when air temperature is predicted to go above 90 deg F (32 deg C), schedule patching work to coincide with time that surface being patched will be in shade or during cooler morning hours.
- D. Clean masonry surfaces only when air temperature is 40 deg F (4 deg C) and above and is predicted to remain so for at least 7 days after completion of cleaning.

1.7 SEQUENCING AND SCHEDULING

- A. Order replacement materials at earliest possible date, to avoid delaying completion of the Work.
- B. Perform masonry restoration work in the following sequence:
 - 1. Inspect for open mortar joints and repair before cleaning to prevent intrusion of water and other cleaning materials into wall.
 - 2. Clean Masonry Surfaces
 - 3. Repair existing masonry, including replacing existing masonry with new masonry materials.
 - 4. Rake out joints that are to be repointed.
 - 5. Point mortar joints.
 - 6. Provide final touch-up cleaning of masonry surfaces.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. In other Part 2 articles where titles below introduce lists, the following requirements apply for product selection:
 - 1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the products specified.

2.2 MASONRY MATERIALS

- A. Brick: Provide standard brick and accessories, where required to complete masonry restoration work.
 - 1. Provide units with colors, surface texture, size, and shape to match existing brickwork and with physical properties not less than those determined from preconstruction testing of selected existing units.
 - a. For existing brickwork that exhibits a range of colors, provide brick that matches that range rather than brick that matches an individual color within that range.
- B. Stone: Provide stone to match type, size, texture and dimension as existing adjacent stone. Salvaged stone may be reused. Matching stone located on-site and approved by Architect may

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also be used. If suitable stone is not available on site, contractor will be responsible for sourcing new stone.

2.3 MORTAR MATERIALS

- A. Hydrated Lime: ASTM C 207, Type S.
- B. Mortar Sand: ASTM C 144, unless otherwise indicated.
 - 1. Color: Provide natural sand of color necessary to produce required mortar color.
 - 2. For pointing mortar, provide sand with rounded edges.
 - 3. Match size, texture, and gradation of existing mortar sand as closely as possible. Blend several sands, if necessary, to achieve suitable match.
- C. Mortar Pigments: Natural and synthetic iron oxides, compounded for mortar mixes. Use only pigments with a record of satisfactory performance in masonry mortars.
- D. Water: Potable.

2.4 CLEANING MATERIALS

- A. Water for Cleaning: Potable.
- B. Job-Mixed Mold, Mildew, and Algae Remover: Solution prepared by mixing 2 cups (0.5 L) of tetrasodium polyphosphate (TSPP), 5 quarts (5 L) of 5 percent sodium hypochlorite (bleach), and 15 quarts (15 L) of hot water for every 5 gal. (20 L) of solution required.
- C. Nonacidic Liquid Cleaner: Manufacturer's standard mildly alkaline liquid cleaner formulated for removing mold, mildew, and other organic soiling from ordinary building materials, including polished stone, brick, aluminum, plastics, and wood. To be used upon Architect's approval; following mockup and testing procedure.
 - 1. Product:
 - a. ProSoCo; Enviro Klean Restoration Cleaner.

2.5 MORTAR MIXES

- A. Measurement and Mixing: Measure cementitious materials and sand in a dry condition by volume or equivalent weight. Do not measure by shovel; use known measure. Mix materials in a clean, mechanical batch mixer.
 - 1. Mixing Pointing Mortar: Thoroughly mix cementitious materials and sand together before adding any water. Then mix again adding only enough water to produce a damp, unworkable mix that will retain its form when pressed into a ball. Maintain mortar in this dampened condition for 15 to 30 minutes. Add remaining water in small portions until mortar reaches desired consistency. Use mortar within one hour of final mixing; do not retemper or use partially hardened material.

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- B. Colored Mortar: Produce mortar of color required by using selected ingredients. Do not alter specified proportions without Architect's approval. Match sample of existing original red-tinted mortar identified by Architect.
 - 1. Mortar Pigments: Where mortar pigments are indicated, do not exceed a pigment-to-cement ratio of 1:10 by weight.
- C. Do not use admixtures of any kind in mortar, unless otherwise indicated.
- D. Mortar Mixes: Mix mortar materials in the following proportions:
 - 1. Type A: Pointing Mortar for Interior Exposed Stone Masonry:
 - a. Manufacturer: DeGruxhy's Limeworks, <https://limeworks.us/>
 - b. Product: Ecologic Lime Mortar
 - c. Color: To be selected from Manufacturer's full range of pre-mixed formulas. and texture to be approved by architect
 - 2. Type B: Pointing Mortar for Brick Masonry:
 - a. Manufacturer: DeGruxhy's Limeworks, <https://limeworks.us/>
 - b. Product: Ecologic Lime Mortar
 - c. Color: To be selected from Manufacturer's full range of pre-mixed formulas. and texture to be approved by architect

2.6 CLEANING SOLUTIONS

- A. Dilute cleaning solutions with water to produce solutions not exceeding concentration recommended by cleaning solution manufacturer.
- B. Determine testing and mockup procedure with architect, providing a minimum of three samples for initial selection and preliminary approval, followed by an additional three samples to determine final dilution and dwell time.

PART 3 - EXECUTION

3.1 PROTECTION

- A. Protect persons, motor vehicles, surrounding surfaces of building being restored, building site, plants, and surrounding buildings from harm resulting from masonry restoration work.
- B. Comply with cleaning solution manufacturer's written instructions for protecting building and other surfaces against damage from exposure to its products.
 - 1. Keep wall wet below area being cleaned to prevent streaking from runoff.
 - 2. Neutralize and collect alkaline and acid wastes for disposal off Owner's property.
 - 3. Dispose of runoff from cleaning operations by legal means and in a manner that prevents soil erosion, undermining of paving and foundations, damage to landscaping, and water penetration into building interiors.
- C. Prevent mortar from staining face of surrounding masonry and other surfaces.

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1. Keep wall area wet below rebuilding and pointing work to discourage mortar from adhering.
2. Immediately remove mortar in contact with exposed masonry and other surfaces.

3.2 UNUSED ANCHOR REMOVAL

- A. Remove masonry anchors, brackets, wood nailers, and other extraneous items no longer in use unless identified as historically significant or indicated to remain.
 1. Remove items carefully to avoid spalling or cracking masonry.
 2. If item cannot be removed without damaging surrounding masonry, cut off item flush with surface and core drill surrounding masonry and item as close around item as practical.
 3. Patch holes where items were removed unless directed to remove and replace units.

3.3 CLEANING MASONRY

- A. Proceed only after completion and approval of testing and mock-up procedure.
- B. Proceed with cleaning in an orderly manner; work from top to bottom of each scaffold width and from one end of each elevation to the other.
- C. Use only those cleaning methods indicated for each masonry material and location.
 1. Do not use wire brushes or brushes that are not resistant to chemical cleaner being used. Use plastic-bristle brushes or natural-fiber brushes that will resist cleaning solution being used.
 2. Minimize use of spray equipment to avoid damage to adjacent wood and other finishes.
- D. Perform each cleaning method indicated in a manner that results in uniform coverage of all surfaces, including corners, moldings, and interstices, and that produces an even effect without streaking or damaging masonry surfaces.
- E. Preliminary Cleaning: Before beginning general cleaning, remove extraneous substances that are resistant to cleaning methods being used. Extraneous substances include paint, caulking, asphalt, and tar.
- F. Cleaning Solution Application Methods: Apply cleaning solutions to masonry surfaces to comply with manufacturer's written instructions; use brush application methods. Do not allow chemicals to remain on surface for periods longer than those indicated or recommended by manufacturer.
- G. Rinse off chemical residue and soil by working upward from bottom to top of each treated area. Periodically during each rinse, test pH of rinse water running off of cleaned area to determine that chemical cleaner is completely removed.
 1. Apply neutralizing agent and repeat rinse, if necessary, to produce tested pH of between 6.7 and 7.5.
- H. After cleaning is complete, remove protection no longer required. Remove tape and adhesive marks.

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3.4 BRICK REBUILDING

- A. At locations indicated, carefully remove and set aside bricks to extent indicated. Discard all bricks that are damaged, spalled, or deteriorated. Carefully demolish or remove entire units from joint to joint, without damaging surrounding masonry, in a manner that permits replacement with full-size units.
 - 1. When removing single bricks, remove material from center of brick and work toward outside edges.
- B. Inspect remaining brickwork to ensure that it provides a sound foundation for new brickwork.
- C. Support and protect remaining masonry that surrounds removal area. Maintain flashing, reinforcement, lintels, and adjoining construction in an undamaged condition.
- D. Notify Architect of unforeseen detrimental conditions including voids, cracks, bulges, and loose masonry units in existing masonry backup, rotted wood, rusted metal, and other deteriorated items.
- E. Remove in an undamaged condition whole bricks where necessary.
 - 1. Remove mortar, loose particles, and soil from brick by cleaning with hand chisels, brushes, and water.
 - 2. Store brick for reuse, as indicated.
 - 3. Deliver cleaned brick not required for reuse to Owner, unless otherwise directed.
- F. Clean bricks surrounding removal areas by removing mortar, dust, and loose particles in preparation for replacement.
- G. Install replacement brick unit into bonding and coursing pattern of existing brick. If cutting is required, use a motor-driven saw designed to cut masonry with clean, sharp, unchipped edges.
- H. Lay replacement brick unit with completely filled bed, head, and collar joints. Butter ends with sufficient mortar to fill head joints and shove into place. Wet both replacement and surrounding bricks that have ASTM C 67 initial rates of absorption (suction) of more than 30 g/30 sq. in. per min. (30 g/194 sq. cm per min.). Use wetting methods that ensure that units are nearly saturated but surface is dry when laid. Maintain joint width for replacement units to match existing joints.
 - 1. Tool exposed mortar joints in repaired areas to match joints of surrounding existing brickwork.
 - 2. Rake out mortar used for laying brick before mortar sets and point new mortar joints in repaired area to comply with requirements for repointing existing masonry, and at same time as repointing of surrounding area.

3.5 REPOINTING MASONRY

- A. Rake out joints as follows:
 - 1. Remove mortar from joints to depth of 2 1/2 times joint width, but not less than 1 inch or not less than that required to expose sound, non-friable mortar.

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2. Remove mortar from masonry surfaces within raked-out joints to provide reveals with square backs and to expose masonry for contact with pointing mortar. Brush, vacuum, or flush joints to remove dirt and loose debris.
 3. Do not spall edges of masonry units or widen joints. Replace or patch damaged masonry units as directed by Architect.
 - a. Cut out center of horizontal mortar bed joints using angle grinders with diamond-impregnated metal blades. Remove remaining mortar by hand with chisel and mallet. Strictly adhere to written quality-control program. Quality-control program shall include provisions for demonstrating ability of operators to use tools without damaging masonry, supervising performance, and preventing damage due to worker fatigue.
- B. Notify Architect of unforeseen detrimental conditions including voids in mortar joints, cracks, loose masonry units, rotted wood, rusted metal, and other deteriorated items.
- C. Point joints as follows:
1. Rinse masonry-joint surfaces with water to remove dust and mortar particles. Time rinsing application so, at time of pointing, joint surfaces are damp but free of standing water. If rinse water dries, dampen masonry-joint surfaces before pointing.
 2. Apply pointing mortar first to areas where existing mortar was removed to depths greater than surrounding areas. Apply in layers not greater than 3/8 inch (9 mm) until a uniform depth is formed. Fully compact each layer thoroughly and allow it to become thumbprint hard before applying next layer.
 3. After low areas have been filled to same depth as remaining joints, point all joints by placing mortar in layers not greater than 3/8 inch (9 mm). Fully compact each layer and allow to become thumbprint hard before applying next layer. Where existing bricks have worn or rounded edges, slightly recess finished mortar surface below face of masonry to avoid widened joint faces. Take care not to spread mortar over edges onto exposed masonry surfaces or to featheredge mortar.
 4. When mortar is thumbprint hard, tool joints to match previously approved mortar joint mock-ups. Remove excess mortar from edge of joint by brushing.
- D. Cure mortar by maintaining in thoroughly damp condition for at least 72 hours including weekends and holidays.
1. Acceptable curing methods include covering with wet burlap and plastic sheeting, periodic hand misting, and periodic mist spraying using system of pipes, mist heads, and timers.
 2. Adjust curing methods to ensure that pointing mortar is damp throughout its depth without eroding surface mortar.
- E. Where repointing work precedes cleaning of existing masonry, allow mortar to harden at least 30 days before beginning cleaning work.

3.6 FIELD QUALITY CONTROL

- A. Architect's Project Representatives: Architect will assign Project representatives to help carry out Architect's responsibilities at the site, including observing progress and quality of portion of

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the Work completed. Allow Architect's Project representatives use of scaffolding, as needed, to observe progress and quality of portion of the Work completed.

- B. Notify Architect's Project representatives in advance of times when lift devices and scaffolding will be relocated. Do not relocate lift devices and scaffolding until Architect's Project representatives have had reasonable opportunity to make observations of work areas at lift device or scaffold location.

END OF SECTION 049010

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SECTION 051200 - STRUCTURAL STEEL FRAMING

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Extent of structural steel work is shown on drawings, including schedules, notes and details to show size and location of members, typical connections and type of steel required.
- B. Structural steel is that work defined in American Institute of Steel Construction (AISC) "Code of Standard Practice" as modified here and as otherwise shown on drawings.
 - 1. Section 2.1 to include "Lintels shown or otherwise enumerated or scheduled."
 - 2. Section 4.4, The first two sentences of this section are to be replaced with the following, "Shop drawings are to be made by the fabricator, prints thereof are to be submitted to the structural engineer and architect for their examination and approval. These shop drawings are to be submitted in minimum of the following three phases: Anchor bolt plans and advanced shipment pieces; Erection plans and thirdly; Piece details (maximum of 100 sheets per submission). The fabricator is to await the receipt of the previous phase prior to submission of the next phase. The fabricator is to include an allowance of fourteen (14) calendar days in his schedule for the review of these drawings by the structural engineer for the return of shop drawings. These calendar days start from the time the drawings are received by the engineer."
- C. Miscellaneous Metal Fabricators are specified elsewhere in Division 5.
- D. Refer to Division 3 for anchor bolt installation in concrete; Division 4 for masonry.
- E. Source Quality Control: Materials and fabrication procedures are subject to inspection and tests in mill, shop and field, conducted by a qualified inspection agency. Such inspections and tests will not relieve Contractor of responsibility for providing materials and fabrication procedures in compliance with specified requirements.
 - 1. Promptly remove and replace materials or fabricated components which do not comply.
- F. Design of Members and Connections: Details shown are typical; similar details apply to similar conditions, unless otherwise indicated. Verify dimensions at site whenever possible without causing delay in the work.
 - 1. Promptly notify Architect whenever design of members and connections for any portion of structure are not clearly indicated.

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1.3 SUBMITTALS

- A. Product Data: Submit producer's or manufacturer's specifications and installation instructions for following products. Include laboratory test reports and other data to show compliance with specifications (including specified standards).
 - 1. Structural steel (each type), including certified copies of mill reports covering chemical and physical properties.
 - 2. High-strength bolts (each type), including nuts and washers.
 - 3. Structural steel primer paint.
- B. Shop Drawings: Submit shop drawings, including complete details and schedules for fabrication and assembly of structural steel members, procedures and diagrams.
- C. Include details of cuts, connections, camber, holes and other pertinent data. Indicate welds by standard AWS A2.1 and A2.4 symbols; and show size, length and type of each weld.
 - 1. Provide setting drawings, templates and directions for installation of anchor bolts and other anchorages to be installed as work of other sections.
- D. Test Reports: Submit copies of tests conducted on shop and field bolted and welded connections. Include data on type (s) of tests conducted and test results.

1.4 QUALITY ASSURANCE

- A. Codes and Standards: Comply with provisions of following, except as otherwise indicated:
- B. AISC "Code of Standard Practice for Steel Buildings and Bridges".
 - 1. Paragraph 4.2.1 of the above code is hereby modified by deletion of the following sentence: "This approval constitutes the owner's acceptance of all responsibility for the design adequacy of any connections designed by the fabricator as a part of this preparation of these shop drawings".
- C. AISC "Specifications for the Design, Fabrication and Erection of Structural Steel for Buildings", including "Commentary" and Supplements thereto as issued.
- D. AISC "Specifications for Architecturally Exposed Structural Steel".
- E. AISC "Specifications for Structural Joints using ASTM A 325 or A 490 Bolts" approved by the Research Council on Riveted and Bolted Structural Joints of the Engineering Foundation.
- F. American Welding Society (AWS) D1.1 "Structural Welding Code - Steel".

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- G. Qualifications for Welding Work: Qualify welding processes and welding operators in accordance with AWS "Standard Qualification Procedure".
- H. Provide certification that welders to be employed in work have satisfactorily passed AWS qualification tests.
 - 1. If recertification of welders is required, retesting will be Contractor's responsibility.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials to site at such intervals to insure uninterrupted progress of work.
- B. Deliver anchor bolts and anchorage devices, which are to be embedded in cast-in-place concrete or masonry, in ample time to not delay work.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Metal Surfaces, General: For fabrication of work which will be exposed to view, use only materials which are smooth and free of surface blemishes including pitting, rust and scale seam marks, roller marks, rolled trade names and roughness. Remove such blemishes by grinding, or by welding and grinding, prior to cleaning, treating and application of surface finishes.
- B. Structural Steel Wide Flange Shapes: ASTM A 992/A572, Grade 50
- C. Other Structural Steel Shapes, Plates and Bars: ASTM A 36.
- D. Cold-Formed Steel Tubing: ASTM A 500, Grade B.
- E. Anchor Bolts: ASTM A 307, nonheaded type unless otherwise indicated.
- F. High-Strength Threaded Fasteners: Heavy hexagon structural bolts, heavy hexagon nuts and hardened washers, as follows:
 - 1. Quenched and tempered medium-carbon steel bolts, nuts and washers, complying with ASTM A 325.
 - 2. Direct tension indicator washers may be used at Contractor's option.
- G. Electrodes for Welding: Comply with AWS Code.
- H. Structural Steel Primer Paint: SSPC-PS Guide 7.00

2.2 FABRICATION

- A. Shop Fabrication and Assembly: Fabricate and assemble structural assemblies in shop to greatest extent possible. Fabricate items of structural steel in accordance with AISC

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Specifications and as indicated on final shop drawings. Provide camber in structural members where indicated.

- B. Properly mark and match-mark materials for field assembly. Fabricate for delivery sequence which will expedite erection and minimize field handling of materials.
- C. Where finishing is required, complete assembly, including welding of units, before start of finishing operations. Provide finish surfaces of members exposed in final structure free of markings, burrs and other defects.
- D. Connections: Weld or bolt shop connections, as indicated.
- E. Bolt field connections, except where welded connections or other connections are indicated.
 - 1. Provide high-strength threaded fasteners for all bolted connections, except where unfinished bolts are indicated.
- F. Welded Construction: Comply with AWS Code for procedures, appearance and quality of welds and methods used in correcting welding work.
- G. Holes for Other Work: Provide holes required for securing other work to structural steel framing, and for passage of other work through steel framing members, as shown on final shop drawings.
- H. Provide threaded nuts welded to framing, and other specialty items as indicated to receive other work.
- I. Cut, drill or punch holes perpendicular to metal surfaces. Do not flame cut holes or enlarge holes by burning. Drill holes in bearing plates.
- J. Field drill holes in existing steel members for connection of new steel as noted on the drawings.

2.3 SHOP PAINTING

- A. General: Shop paint structural steel, except those members or portions of members to be embedded in concrete or mortar or to receive fire-proofing. Paint embedded steel which is partially exposed on exposed portions and initial 2" of embedded areas only.
- B. Surface Preparation: After inspection and before shipping, clean steelwork to be painted. Remove loose rust, loose mill scale and spatter, slag or flux deposits. Clean steel in accordance with Steel Structures Painting Council (SSPC) as follows:
 - 1. SP-1 "Solvent Cleaning".
 - 2. SP-3 "Power Tool Cleaning".
- C. Painting: Immediately after surface preparation, apply structural steel primer paint in accordance with Manufacturer's instructions and at a rate to provide dry film thickness of

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not less than 1.5 mils. Use painting methods which result in full coverage of joints, corners, edges and exposed surfaces.

PART 3 - EXECUTION

3. 1 ERECTION

- A. Surveys: Employ a registered professional engineer or land surveyor for accurate erection of structural steel. Check elevations of concrete and masonry bearing surfaces, and locations of anchor bolts and similar devices, before erection work proceeds, and report discrepancies to Architect. Do not proceed with erection until corrections have been made, or until compensating adjustment to structural steel work have been agreed upon with Architect.
- B. Temporary Shoring and Bracing: Provide temporary shoring and bracing members with connections of sufficient strength to bear imposed loads. Remove temporary members and connections when permanent members are in place and final connections are made. Provide temporary guy lines to achieve proper alignment of structures as erection proceeds.
- C. Temporary Planking: Provide temporary planking and working platforms as necessary to effectively complete work.
- D. Field Assembly: Set structural frames accurately to lines and elevations indicated. Align and adjust various members forming part of complete frame or structure before permanently fastening. Clean bearing surfaces and other surfaces which will be in permanent contact before assembly. Perform necessary adjustments to compensate for discrepancies in elevations and alignment.
- E. Level and plumb individual members of structure within specified AISC tolerances.
- F. Splice members only where indicated and accepted on shop drawings.
- G. Erection Bolts: On exposed welded construction, remove erection bolts, fill holes with plug welds and grind smooth at exposed surfaces.
- H. Comply with AISC Specifications for bearing, adequacy of temporary connections, alignment and removal of paint on surfaces adjacent to field welds.
- I. Do not enlarge unfair holes in members by burning or by use of drift pins, except in secondary bracing members. Ream holes that must be enlarged to admit bolts.
- J. Gas Cutting: Do not use gas cutting torches in field for correcting fabrication errors in primary structural framing. Cutting will be permitted only as acceptable to Architect.
- K. Touch-Up Painting: Immediately after erection, clean field welds, bolted connections and abraded areas of shop paint. Apply paint to exposed areas using same material as used for shop painting.
- L. Apply by brush or spray to provide minimum dry film thickness of 1.5 mils.

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3. 2 QUALITY CONTROL

- A. Testing agency shall conduct and interpret tests and state in each report whether test specimens comply with requirements, and specifically state any deviations therefrom.
- B. Provide access for testing agency to places where structural steel work is being fabricated or produced so that required inspection and testing can be accomplished.
- C. Correct deficiencies in structural steel work which inspections and laboratory test reports have indicated to be not in compliance with requirements. Perform additional tests, at Contractor's expense, as may be necessary to reconfirm any noncompliance of original work, and as may be necessary to show compliance of corrected work.
- D. Shop Bolted Connections: Inspect or test in accordance with AISC specifications.
- E. Shop Welding: Inspect and test during fabrication of structural steel assemblies, as follows:
 - 1. Certify welders and conduct inspections and tests as required. Record types and locations of defects found in work. Record work required and performed to correct deficiencies.
 - 2. Perform visual inspection of all welds.
- F. Field Bolted Connections: Inspect in accordance with AISC specifications.
- G. Field Welding: Inspect and test during erection of structural steel as follows:
 - 1. Certify welders and conduct inspections and tests as required. Record types and locations of defects found in work. Record work required and performed to correct deficiencies.
 - 2. Perform visual inspection of all welds.

END OF SECTION

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SECTION 061000 - ROUGH CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Framing with dimension lumber.
2. Framing with timber.
3. Framing with engineered wood products.
4. Wood blocking, cants, and nailers.
5. Wood furring and grounds.
6. Wood sleepers.

B. Related Requirements:

1. Section 061600 "Sheathing" for sheathing, subflooring, and underlayment.

1.3 DEFINITIONS

- A. Boards or Strips: Lumber of less than **2 inches nominal (38 mm actual)** size in least dimension.
- B. Dimension Lumber: Lumber of **2 inches nominal (38 mm actual)** size or greater but less than **5 inches nominal (114 mm actual)** size in least dimension.
- C. Exposed Framing: Framing not concealed by other construction.
- D. OSB: Oriented strand board.
- E. Timber: Lumber of **5 inches nominal (114 mm actual)** size or greater in least dimension.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.
1. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used and net amount of preservative retained.

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2. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.

1.5 INFORMATIONAL SUBMITTALS

- A. Material Certificates: For dimension lumber specified to comply with minimum allowable unit stresses. Indicate species and grade selected for each use and design values approved by the ALSC Board of Review.
- B. Evaluation Reports: For the following, from ICC-ES:
 1. Wood-preserved-treated wood.
 2. Engineered wood products.
 3. Power-driven fasteners.
 4. Post-installed anchors.
 5. Metal framing anchors.

1.6 QUALITY ASSURANCE

- A. Testing Agency Qualifications: For testing agency providing classification marking for fire-retardant treated material, an inspection agency acceptable to authorities having jurisdiction that periodically performs inspections to verify that the material bearing the classification marking is representative of the material tested.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Stack wood products flat with spacers beneath and between each bundle to provide air circulation. Protect wood products from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

- A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, comply with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Grade lumber by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.
 1. Factory mark each piece of lumber with grade stamp of grading agency.
 2. For exposed lumber indicated to receive a stained or natural finish, mark grade stamp on end or back of each piece.
 3. Dress lumber, S4S, unless otherwise indicated.

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- B. Maximum Moisture Content of Lumber: 15 percent for 2-inch nominal (38-mm actual) thickness or less; 19 percent for more than 2-inch nominal (38-mm actual) thickness unless otherwise indicated.
- C. Engineered Wood Products: Acceptable to authorities having jurisdiction and for which current model code research or evaluation reports exist that show compliance with building code in effect for Project.
 - 1. Allowable design stresses, as published by manufacturer, shall meet or exceed those indicated. Manufacturer's published values shall be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency.

2.2 WOOD-PRESERVATIVE-TREATED LUMBER

- A. Preservative Treatment by Pressure Process: AWPA U1; Use Category UC2 for interior construction not in contact with ground, Use Category UC3b for exterior construction not in contact with ground, and Use Category UC4a for items in contact with ground.
 - 1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.
- B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or that does not comply with requirements for untreated material.
- C. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.
- D. Application: Treat items indicated on Drawings, and the following:
 - 1. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.
 - 2. Wood sills, sleepers, blocking, furring, and similar concealed members in contact with masonry or concrete.
 - 3. Wood framing and furring attached directly to the interior of below-grade exterior masonry or concrete walls.
 - 4. Wood framing members that are less than 18 inches (460 mm) above the ground in crawlspaces or unexcavated areas.
 - 5. Wood floor plates that are installed over concrete slabs-on-grade.

2.3 DIMENSION LUMBER FRAMING

- A. Joists, Rafters, and Other Framing Not Listed Above: No. 1 grade.
 - 1. Species:
 - a. Douglas fir-larch; WCLIB or WWPA.

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- B. Exposed Framing: Hand-select material for uniformity of appearance and freedom from characteristics, on exposed surfaces and edges, that would impair finish appearance, including decay, honeycomb, knot-holes, shake, splits, torn grain, and wane.
 - 1. Species and Grade: Douglas fir; Select Structural grade
 - 2. Finish: Smooth all sides.

2.4 TIMBER FRAMING

- A. Comply with the following requirements, according to grading rules of grading agency indicated:
 - 1. Species and Grade: Douglas fir; Select Structural.
 - 2. Finish: Smooth all sides.

2.5 ENGINEERED WOOD PRODUCTS

- A. Source Limitations: Obtain each type of engineered wood product from single source from a single manufacturer.
- B. Parallel-Strand Lumber: Structural composite lumber made from wood strand elements with grain primarily parallel to member lengths, evaluated and monitored according to ASTM D5456 and manufactured with an exterior-type adhesive complying with ASTM D2559.
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. Weyerhaeuser Company.
 - b. Boise Cascade Company.
 - c. Louisiana-Pacific Corporation.
 - 2. Extreme Fiber Stress in Bending, Edgewise: 2900 psi (20 MPa) for 12-inch nominal- (286-mm actual-) depth members.
 - 3. Modulus of Elasticity, Edgewise: 2,200,000 psi (15 100 MPa).

2.6 MISCELLANEOUS LUMBER

- A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:
 - 1. Blocking.
 - 2. Nailers.
 - 3. Rooftop equipment bases and support curbs.
 - 4. Cants.
 - 5. Furring.
 - 6. Grounds.
 - 7. Utility shelving.

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- B. Dimension Lumber Items: Construction or No. 2 grade lumber of any of the following species:
 - 1. Hem-fir (north); NLGA.
 - 2. Spruce-pine-fir; NLGA.
 - 3. Hem-fir; WCLIB or WWPA.

- C. Concealed Boards: 19 percent maximum moisture content and any of the following species and grades:
 - 1. Mixed southern pine or southern pine; No. 2 grade; SPIB.
 - 2. Hem-fir or hem-fir (north); Construction or No. 2 Common grade; NLGA, WCLIB, or WWPA.
 - 3. Spruce-pine-fir (south) or spruce-pine-fir; Construction or No. 2 Common grade; NeLMA, NLGA, WCLIB, or WWPA.

- D. For blocking not used for attachment of other construction, Utility, Stud, or No. 3 grade lumber of any species may be used provided that it is cut and selected to eliminate defects that will interfere with its attachment and purpose.

- E. For blocking and nailers used for attachment of other construction, select and cut lumber to eliminate knots and other defects that will interfere with attachment of other work.

- F. For furring strips for installing plywood or hardboard paneling, select boards with no knots capable of producing bent-over nails and damage to paneling.

2.7 PLYWOOD BACKING PANELS

- A. Equipment Backing Panels: Plywood, DOC PS 1, Exterior, A-C, in thickness indicated or, if not indicated, not less than **3/4-inch (19-mm)** nominal thickness.

2.8 FASTENERS

- A. General: Fasteners shall be of size and type indicated and shall comply with requirements specified in this article for material and manufacture.
 - 1. Where rough carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners of Type 304 stainless steel.

- B. Nails, Brads, and Staples: ASTM F1667.

- C. Power-Driven Fasteners: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC70.

- D. Post-Installed Anchors: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC01 or ICC-ES AC308 as appropriate for the substrate.
 - 1. Material: Stainless steel with bolts and nuts complying with **ASTM F593 and ASTM F594, Alloy Group 1 or 2 (ASTM F738M and ASTM F836M, Grade A1 or A4)**.

2.9 METAL FRAMING ANCHORS

- A. **Manufacturers:** Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
1. [Simpson Strong-Tie Co., Inc.](#)
 2. [Cleveland Steel Specialty Co.](#)
 3. [MiTek Industries, Inc.](#)
 4. [Phoenix Metal Products, Inc.](#)
- B. Allowable design loads, as published by manufacturer, shall meet or exceed those of basis-of-design products. Manufacturer's published values shall be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency. Framing anchors shall be punched for fasteners adequate to withstand same loads as framing anchors.
- C. Galvanized-Steel Sheet: Hot-dip, zinc-coated steel sheet complying with ASTM A653/A653M, **G60 (Z180)** coating designation.
1. Use for interior locations unless otherwise indicated.
- D. Hot-Dip, Heavy-Galvanized Steel Sheet: ASTM A653/A653M; structural steel (SS), high-strength low-alloy steel Type A (HSLAS Type A), or high-strength low-alloy steel Type B (HSLAS Type B); **G185 (Z550)** coating designation; and not less than **0.036 inch (0.9 mm)** thick.
1. Use for wood-preserved-treated lumber and where indicated.
- E. Stainless Steel Sheet: ASTM A240/A240M or ASTM A666, Type 304.
1. Use for exterior locations and where indicated.
- F. Joist Hangers: U-shaped joist hangers with **2-inch- (50-mm-)** long seat and **1-1/4-inch- (32-mm-)** wide nailing flanges at least 85 percent of joist depth.
1. Thickness: **0.062 inch (1.6 mm)**.
- G. Top Flange Hangers: U-shaped joist hangers, full depth of joist, formed from metal strap with tabs bent to extend over and be fastened to supporting member.
1. Strap Width: **1-1/2 inches (38 mm)**.
 2. Thickness: **0.062 inch (1.6 mm)**.
- H. Bridging: Rigid, V-section, nailless type, **0.050 inch (1.3 mm)** thick, length to suit joist size and spacing.
- I. Joist Ties: Flat straps, with holes for fasteners, for tying joists together over supports.
1. Width: **1-1/4 inches (32 mm)**.
 2. Thickness: **0.062 inch (1.6 mm)**.
 3. Length: **16 inches (400 mm)**.

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- J. Hold-Downs: Brackets for bolting to wall studs and securing to foundation walls with anchor bolts or to other hold-downs with threaded rods and designed with first of two bolts placed seven bolt diameters from reinforced base.
1. Bolt Diameter: **5/8 inch (15.8 mm)**.
 2. Width: **3-3/16 inches (81 mm)**.
 3. Body Thickness: **0.138 inch (3.5 mm)**.
 4. Base Reinforcement Thickness: **0.239 inch (6.1 mm)**.

2.10 MISCELLANEOUS MATERIALS

- A. Sill-Sealer Gaskets: Closed-cell neoprene foam, **1/4 inch (6.4 mm)** thick, selected from manufacturer's standard widths to suit width of sill members indicated.
- B. Adhesives for Gluing Furring to Concrete or Masonry: Formulation complying with ASTM D3498 that is approved for use indicated by adhesive manufacturer.
- C. Water-Repellent Preservative: NWWDA-tested and -accepted formulation containing 3-iodo-2-propynyl butyl carbamate, combined with an insecticide containing chlorpyrifos as its active ingredient.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Framing Standard: Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.
- B. Framing with Engineered Wood Products: Install engineered wood products to comply with manufacturer's written instructions.
- C. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry accurately to other construction. Locate furring, nailers, blocking, grounds, and similar supports to comply with requirements for attaching other construction.
- D. Install plywood backing panels by fastening to studs; coordinate locations with utilities requiring backing panels.
- E. Install metal framing anchors to comply with manufacturer's written instructions. Install fasteners through each fastener hole.
- F. Install sill sealer gasket to form continuous seal between sill plates and foundation walls.
- G. Do not splice structural members between supports unless otherwise indicated.
- H. Provide blocking and framing as indicated and as required to support facing materials, fixtures, specialty items, and trim.

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1. Provide metal clips for fastening gypsum board or lath at corners and intersections where framing or blocking does not provide a surface for fastening edges of panels. Space clips not more than **16 inches (406 mm)** o.c.
- I. Provide fire blocking in furred spaces, stud spaces, and other concealed cavities as indicated and as follows:
 1. Fire block furred spaces of walls, at each floor level, at ceiling, and at not more than **96 inches (2438 mm)** o.c. with solid wood blocking or noncombustible materials accurately fitted to close furred spaces.
 2. Fire block concealed spaces of wood-framed walls and partitions at each floor level, at ceiling line of top story, and at not more than **96 inches (2438 mm)** o.c. Where fire blocking is not inherent in framing system used, provide closely fitted solid wood blocks of same width as framing members and **2-inch nominal (38-mm actual)** thickness.
 3. Fire block concealed spaces between floor sleepers with same material as sleepers to limit concealed spaces to not more than **100 sq. ft. (9.3 sq. m)** and to solidly fill space below partitions.
 - J. Sort and select lumber so that natural characteristics do not interfere with installation or with fastening other materials to lumber. Do not use materials with defects that interfere with function of member or pieces that are too small to use with minimum number of joints or optimum joint arrangement.
 - K. Comply with AWWPA M4 for applying field treatment to cut surfaces of preservative-treated lumber.
 1. Use inorganic boron for items that are continuously protected from liquid water.
 2. Use copper naphthenate for items not continuously protected from liquid water.
 - L. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:
 1. Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code (IBC).
 - M. Use steel common nails unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood. Drive nails snug but do not countersink nail heads unless otherwise indicated.
 1. Use common nails unless otherwise indicated. Drive nails snug but do not countersink nail heads.
- ### 3.2 INSTALLATION OF WOOD BLOCKING AND NAILERS
- A. Install where indicated and where required for screeding or attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.
 - B. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces unless otherwise indicated.

3.3 INSTALLATION OF WOOD FURRING

- A. Install level and plumb with closure strips at edges and openings. Shim with wood as required for tolerance of finish work.
- B. Furring to Receive Plywood or Hardboard Paneling: Install **1-by-3-inch nominal- (19-by-63-mm actual-)** size furring horizontally at spacing needed to meet project requirements.
- C. Furring to Receive Gypsum Board or Plaster Lath: Install **1-by-2-inch nominal- (19-by-38-mm actual-)** size furring vertically at **16 inches (406 mm)** o.c.

3.4 INSTALLATION OF FLOOR JOIST FRAMING

- A. General: Install floor joists with crown edge up and support ends of each member with not less than **1-1/2 inches (38 mm)** of bearing on wood or metal, or **3 inches (76 mm)** on masonry. Attach floor joists as follows:
 - 1. Where supported on wood members, by toe nailing or by using metal framing anchors.
 - 2. Where framed into wood supporting members, by using wood ledgers as indicated or, if not indicated, by using metal joist hangers.
- B. Frame openings with headers and trimmers supported by metal joist hangers; double headers and trimmers where span of header exceeds **48 inches (1200 mm)**.
- C. Do not notch in middle third of joists; limit notches to one-sixth depth of joist, one-third at ends. Do not bore holes larger than one-third depth of joist; do not locate closer than **2 inches (50 mm)** from top or bottom.
- D. Provide solid blocking of **2-inch nominal (38-mm actual)** thickness by depth of joist at ends of joists unless nailed to header or band.
- E. Lap members framing from opposite sides of beams, girders, or partitions not less than **4 inches (102 mm)** or securely tie opposing members together. Provide solid blocking of **2-inch nominal (38-mm actual)** thickness by depth of joist over supports.
- F. Anchor members paralleling masonry with **1/4-by-1-1/4-inch (6.4-by-32-mm)** metal strap anchors spaced not more than **96 inches (2438 mm)** o.c., extending over and fastening to three joists. Embed anchors at least **4 inches (102 mm)** into grouted masonry with ends bent at right angles and extending **4 inches (102 mm)** beyond bend.
- G. Provide solid blocking between joists under jamb studs for openings.
- H. Under non-load-bearing partitions, provide double joists separated by solid blocking equal to depth of studs above.
 - 1. Provide triple joists separated as above, under partitions receiving ceramic tile and similar heavy finishes or fixtures.
- I. Provide bridging of type indicated below, at intervals of **96 inches (2438 mm)** o.c., between joists.

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1. Steel bridging installed to comply with bridging manufacturer's written instructions.

3.5 PROTECTION

- A. Protect rough carpentry from weather. If, despite protection, rough carpentry becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

END OF SECTION 061000

SECTION 066100 - EPOXY CONSOLIDATION AND PATCHING

PART 1 - GENERAL:

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General Documents, Special Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. The Work Includes: This Section includes surface preparation, consolidation and patching (replacement) of wood members and surfaces, including but not limited to the following:
1. Window sills, jamb legs.
 2. Doors and door trim.
 3. Other wood trim
- B. Note that there are limited areas that require epoxy consolidation. Epoxy consolidation repairs shall be used for non-structural, cosmetic repairs.
1. In addition to the areas indicated, patch exposed surfaces damaged during restoration work. In all cases, consolidation and patching shall match existing adjacent finishes.

1.3 SUBMITTALS

- A. Submit the following:
1. Product data for each epoxy system specified.
 2. Provide the manufacturer's technical information including label analysis and instructions for handling, storage, and application of each material proposed for use.
 3. List each material and cross-reference the specific system and application. Identify each material by the manufacturer's catalog number and general classification.
 4. Provide certification by the manufacturer that products supplied comply with local regulations.
- B. Samples: Provide samples of each material to be applied, with texture and color to simulate actual conditions, on representative samples of the actual substrate. Use representative colors when preparing samples for review. Resubmit until required sheen, color, and texture are achieved.
- C. Sample Mockups:
1. Field-Constructed Mockups: Prepare the following samples on the building where directed by Architect. Retain acceptable samples in an undisturbed condition, suitably marked, during construction as a standard for judging the completed Work. The intent is to match the color and texture of the adjacent original wood material as closely as possible.

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- a. Consolidation: One sample area.
 - b. Patching (Replacement): One sample area.
2. Final acceptance will be from job-applied samples.

1.4 QUALITY ASSURANCE

- A. Applicator Qualifications: Engage an experienced applicator who has completed epoxy consolidation and patching system applications at similar Historic Buildings and Sites. Experience shall be similar in material and extent to those indicated for the Project that have resulted in a construction record of successful in-service performance
- B. Single-Source Responsibility: Provide materials produced by the same manufacturer to the fullest extent possible.

1.5 HANDLING AND STORAGE

- A. Deliver materials to the job site in the manufacturer's original, unopened packages and containers bearing manufacturer's name and label with the product trade name manufacturer's instructions.
- B. Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45 deg F. Protect from freezing. Keep storage area neat and orderly. Do not store materials within 20' of the buildings.
- C. Follow safety precautions as defined by product manufacturer, product associations or OSHA. Observe good housekeeping practices. Remove waste materials daily.

1.6 PROJECT CONDITIONS

- A. Apply epoxy only when the weather conditions meet or exceed favorable as defined by 5.1.5.4 of ASTM C962-81.
- B. Wood to receive consolidation and patching shall have a moisture content below 18% by weight. Protect area from moisture until epoxy has completely cured.
- D. Apply materials only when the temperature of surfaces to be consolidated or patched and surrounding air temperatures are between 60 deg F and 90 deg F. Maintain temperature of wood within 3" of the area within 45 deg F. to 90 deg F.
- E. Protect areas of consolidation and patching from freezing and from direct sunlight.

PART 2 - PRODUCTS

2.1 MATERIALS

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- A. Epoxy Materials, General: Provide epoxies, fillers and related materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by the manufacturer, based on testing and field experience.
- B. Material Quality: Provide the manufacturer's best-quality material of the various types specified. Material containers not displaying manufacturer's product identification will not be acceptable.
- C. Epoxy consolidant: Provide material with a record of regular and proven use for consolidation applications in decayed wood. Provide material of low viscosity and with slow setting time to allow for successive applications.
- D. Epoxy patch: Provide material with a record of regular and proven use for patching or wood repair (replacement) applications.

2.2 AVAILABLE PRODUCTS

- A. Subject to compliance with requirements, products which may be incorporated in the work include the following:
 - 1. Biocide:
 - a. Bora-Care Termiticide, Insecticide and Fungicide Concentrate from Preservation Resource Group, Inc., PO Box 1768, Rockville MD 20849, 800-774-7891.
 - b. Or, approved equal.
 - 2. Epoxy Consolidant:
 - c. ConServ Flexible Epoxy Consolidant #100, Conservation Services
 - d. Abatron LiquidWood, Abatron Inc.
 - e. Or approved equal
 - 3. Epoxy Patch:
 - a. ConServ Flexible Epoxy Patch 200, Conservation Services,
 - b. Abatron WoodEpoxy, Abatron Inc.
 - c. Or approved equal
- B. Mixes: Follow manufacturer's instructions.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions under which epoxy consolidation and patching will be performed for compliance with requirements. Do not begin application until unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Remove all loose and soft wood decay prior to application of epoxy consolidant. Remove decay down to sound wood. Where not visible in finished work, 1/8" diameter holes may be

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drilled into the decay area, 1-1/2" apart, for better epoxy penetration. Remove all loose wood fragments and blow out all dust.

- B. Materials Preparation: Carefully mix and prepare epoxy materials according to manufacturer's directions.
- C. Stir material before application to produce a mixture of uniform density; stir as required during application.
 - 1. Use only solvents and thinners approved by the epoxy manufacturer and only within recommended limits.

3.3 APPLICATION

- A. Use liquid consolidation products where wood is mildly checked and cracks, or missing portions, are no larger than 1/16". Match color and texture of adjacent sound wood.
- B. Use wood patching (replacement) products for the repair of larger cracks and replacement of missing portions. Use liquid consolidation products, as required, to stabilize the underlying material before the installation of the patching (replacement) material. Provide colored epoxy products, as required, to match color and texture of adjacent sound wood.
- C. Apply epoxy according to manufacturer's directions. Use applicators and techniques best suited for substrate and type of material being applied.
- D. Apply epoxy consolidant by pouring, brush or spray. Apply liberally to prepared decay area. Repeat application 4 to 6 times or until surfaces will not accept more epoxy. Allow approximately one hour between applications.
 - 1. Do not allow consolidant to touch adjacent areas, materials or building components.
 - 2. For natural finished or stained wood surfaces, if consolidant is the final treatment, color the final coats with mineral colors to match the adjacent areas of wood. Sand or otherwise treat the surface to achieve a texture and sheen that matches the original.
- E. Apply epoxy patch, only on previously consolidated wood, using a putty knife, trowel or similar tool. Epoxy patch material may also be applied with a caulking tube. Apply to prepared area to bring the surface level with adjacent sound material. Do not apply in thickness greater than 1-1/2" or in any one area exceeding one quart at one time. Allow epoxy to set before applying additional layers.
 - 1. Do not allow epoxy patch material to touch adjacent areas, materials or building components.
 - 2. For natural finished or stained wood surfaces where epoxy patch is the final treatment, color the final layer with mineral colors to match the adjacent areas of wood. Sand or otherwise treat the surface to achieve a texture and sheen that matches the original.
- F. Completed Work: Match approved samples for color, texture, and coverage. Remove, refinish, or redo work not complying with specified requirements.

3.4 CLEANUP AND PROTECTION

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- A. Cleanup: At the end of each work day, leave all areas free and clean of epoxy. Remove, and legally dispose of unused epoxy, empty containers, rags, rubbish, tools and other materials from the site.
- B. Protection: Protect work of other trades. Correct damage by cleaning, repairing or replacing, and refinishing, as acceptable to Architect.

END OF SECTION 066100

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SECTION 092100 – LATH & PLASTER

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including Instructions to Bidders, General and Supplementary Instructions to Bidders and General Conditions, Special Conditions and Parts I & II Technical Specification Sections, apply to the work of this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Wood and metal lath.
 - 2. Metal and plastic accessories.
 - 3. Gypsum and lime plastering
- B. Related Sections: The following Sections contain requirements that relate to this Section:
 - 1. Division 6 Section "Rough Carpentry" for wood framing and furring.

1.3 SUBMITTALS

- A. General: Submit each item in this Article according to the Conditions of the Contract and Division 1 Specification Sections.
- B. Product Data consisting of manufacturer's product specifications and installation instructions for each product, including data showing compliance with specified requirements.
- C. Samples for verification in units at least 12 inches (300 mm) square of each type of finish indicated; in sets for each color, texture, and pattern specified, showing the full range of variations expected in these characteristics.
- D. Material Certificates: Submit certificate signed by manufacturer for each kind of plaster aggregate certifying that materials comply with requirements.

1.4 QUALITY ASSURANCE

- A. Qualifications: A firm experienced in plaster restoration and ornamental plaster similar in material, design, and extent to that indicated for this Project, whose work has resulted in applications with a record of successful in-service performance. Minimum proven experience shall be as follows:
 - 1. Plaster Contractor: Must have a minimum of eight (8) years proven experience in construction and supervision of plaster restoration and have successfully completed three (3) projects similar in scope as this project within the last five (5) years.

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2. Plasterers: Must have a minimum of five (5) years proven experience in plaster restoration, and have successfully completed three (3) projects similar in scope as this project within the last five (5) years.
- B. Pre-demolition Conference: Meet on-site with Architect and Owner to review conditions of existing plaster, based on sounding survey conducted by Contractor. Describe methods, sequencing and extent of demolition and repair work prior to commencing plaster demolition.
- C. Benchmark Samples (Mockups): Provide benchmark finish sample for each type of plasterwork required. Duplicate quality of approved sample submittals.
1. Architect will select one area to represent surfaces and conditions for application of each type of plasterwork.
 2. Locate mockups on-site in the location and of the size indicated or, if not indicated, as directed by Architect.
 3. Erect mockups at a minimum of four (4) areas to be patched showing typical sizes in presence of Architect using materials, including lath, support system indicated for final Work.
 4. Notify Architect 7 days in advance of the dates and times when mockups will be constructed.
 5. Demonstrate the proposed range of aesthetic effects and workmanship.
 6. Obtain Architect's approval of mockups before plastering.
 7. Retain and maintain mockups during construction in an undisturbed condition as a standard for judging the completed plaster Work.
 - a. When directed, remove mockups from Project site.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to Project site in original packages, containers, or bundles, labeled with manufacturer's name, product brand name, and lot number.
- B. Store materials inside, under cover, and dry, protected from weather, direct sunlight, surface contamination, aging, corrosion, and damage from construction traffic and other causes. Neatly stack gypsum lath flat to prevent deformation.

1.6 PROJECT CONDITIONS

- A. Environmental Requirements, General: Comply with requirements of referenced plaster application standards and recommendations of plaster manufacturer for environmental conditions before, during, and after plaster application.
- B. Cold-Weather Requirements: When ambient outdoor temperatures are below 40 deg F (4 deg C), maintain continuous uniform temperature of not less than 40 deg F (4 deg C) nor more than 80 deg F (27 deg C) for at least 7 days before beginning plaster application, during its application, and until plaster is dry but for at least 7 days after application is complete. Distribute heat evenly; prevent concentrated or uneven heat from contacting plaster near heat source.

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- C. Ventilation: Ventilate building spaces as required to remove water in excess of that required for hydrating plaster. Begin ventilation immediately after plaster is applied and continue until it sets.
- D. Protect contiguous work from soiling, spattering, moisture deterioration, and other harmful effects caused by plastering.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. Expanded-Metal Lath:
 - a. United States Gypsum Co.
 - 2. Metal Accessories:
 - a. United States Gypsum Co.
 - 3. Gypsum Plasters:
 - a. United States Gypsum Co.
 - 4. Lime Plasters:
 - a. Master of Plaster.

2.2 LATH

- A. Expanded-Metal Lath: Fabricate expanded-metal lath from uncoated or zinc-coated (galvanized) steel sheet to produce lath complying with ASTM C 847 for type, configuration, and other characteristics indicated below, with uncoated steel sheet coated after fabrication into lath.
 - 1. Diamond-Metal Lath: Comply with the following requirements:
 - a. Walls (vertical framing attachment):
 - 1) Pattern: Small diamond mesh (11,00meshes per sq.yd)
 - 2) Weight: 3.4 lb/sq. yd. (1.8 kg/sq. m).
 - 3) Coatings: Galvanized
 - b. Ceilings (horizontal framing attachment):
 - 1) Pattern: 3/8" Rib Lath
 - 2) Weight: 3.4 lb/sq. yd. (1.8 kg/sq. m).
 - 3) Coatings: Galvanized
- B. Wood Lath: Ceiling and wall surfaces
 - 1. Sawn wood lath:
 - a. Species: Manufacturer's standard
 - b. Dimension: Manufacturer's standard
 - c. Attachment: Industry standard

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2.3 ACCESSORIES

- A. General: Comply with material provisions of ASTM C 841 and the requirements indicated below; coordinate depth of accessories with thicknesses and number of plaster coats required.
- B. Plaster Washers and screws: 1-1/4" perforated, galvanized plaster washers, countersunk in center for drywall screw. Use with 1-5/8" galvanized drywall screws. Available from:
 - 1. Wm. A. Killian Hardware.

2.4 MISCELLANEOUS MATERIALS

- A. Water for Mixing and Finishing Plaster: Potable and free of substances capable of affecting plaster set or of damaging plaster, lath, or accessories.
- B. Bonding Compound: Larsen Plaster Weld Bonding Agent.

2.5 PLASTER MATERIALS

- A. Base-Coat Plasters: ASTM C 28, types as indicated below:
 - 1. Scratch Coat: USG Structo-Lite Basecoat perlite aggregate gypsum plaster.
 - 2. Brown Coat: USG Structo-Lite Basecoat perlite aggregate gypsum plaster.
- B. Finish-Coat Plasters: Types as indicated below:
 - 1. Finish Coat: Master of Plaster Restoration Plaster, www.masterofplaster.com, (803) 403-5252.
- C. Aggregates for Base-Coat Plasters: ASTM C 35, type as indicated below:
 - 1. As recommended by base-coat manufacturer.

2.6 PLASTER MIXES AND COMPOSITIONS

- A. Plastering System:
 - 1. Conventional three-coat gypsum plaster
- B. Plaster Base-Coat Compositions: Comply with ASTM C 842 and manufacturer's written instructions for plaster base-coat proportions that correspond to application methods and plaster bases indicated below:

2.7 MIXING

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- A. Mechanically mix cementitious and aggregate materials for plasters to comply with applicable referenced application standard and with recommendations of plaster manufacturer.

PART 3 - EXECUTION

3.1 INSTALLATION OF LATH AND FURRING, GENERAL

- A. Interior Lathing and Furring: Install materials indicated for plaster to comply with ASTM C 841.
- B. Install supplementary framing, blocking, and bracing at terminations in Work and for support of fixtures, equipment services, heavy trim, grab bars, furnishings, and similar work to comply with details indicated or, if not otherwise indicated, to comply with applicable written instructions of plaster manufacturer or, if not available, of USG's "Gypsum Construction Handbook."

3.2 METAL LATHING

- A. Install -metal lath for the following applications where plaster base coats are required. Provide appropriate type, configuration, and weight of metal lath selected from materials indicated that comply with referenced lathing installation standards.
 - 1. Wood or steel framing and furring.

3.3 INSTALLATION OF PLASTERING ACCESSORIES

- A. General: Review use of accessories with Architect prior to use or installation. Generally, use of accessories should be avoided and traditional plastering techniques should be employed.

3.4 PLASTER APPLICATION, GENERAL

- A. Prepare monolithic surfaces for bonded base coats and use bonding compound to comply with requirements of referenced plaster application standards for conditioning monolithic surfaces.
- B. Tolerances: Do not deviate more than plus or minus 1/4 inch in 10 feet (3 mm in 3 m) from a true plane in finished plaster surfaces, as measured by a 10-foot (3-m) straightedge placed at any location on surface.
- C. Sequence plaster application with installation and protection of other work so that neither will be damaged by installation of other.
- D. Plaster flush with screeds and other built-in items or accessories that act as a plaster ground, unless otherwise indicated.
- E. Apply thicknesses and number of coats of plaster as indicated or as required by referenced standards.

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3.5 PLASTER APPLICATION

- A. Plaster Application Standard: Apply plaster materials, composition, mixes, and finishes indicated to comply with ASTM C 842.
- B. Number of Coats: Apply plaster of composition indicated, to comply with the following requirements:
 - 1. Three Coats: Scratch, brown and finish coats over the following plaster bases:
 - a. Metal lath.
 - b. Wood lath
- C. Finish Coats: Apply finish coats to comply with the following requirements:
 - 1. Troweled, unless otherwise indicated.

3.6 CUTTING AND PATCHING

- A. Cut and patch plaster as necessary to accommodate electrical work. Repair or replace work to eliminate blisters, buckles, excessive crazing and check cracking, dry outs, efflorescence, sweat outs, and similar defects and where bond to substrate has failed.
- B. Leave plaster ready for painting.

3.7 SOUNDING OF PLASTER

- A. Sound existing plaster around to all cutting and patching locations with lightweight hammer with standard clear yellow plastic heads. Prepare survey of plaster indicating areas which are sound and areas which have lost key and require reattachment or replacement, due to cutting operations. Review findings of survey with Owner and Architect to determine extent of areas requiring repair or replacement.

3.8 REATTACHMENT OF EXISTING PLASTER

- A. Where required adjacent to areas of plaster cutting and patching, areas of wall and ceiling plaster may be reattached as follows:
 - 1. Scrape or drill shallow recess through finish plaster for plaster washer and screw
 - 2. Drill 1/8" diameter pilot hole for screw.
 - 3. Install plaster washer and screw through plaster into wood lath substrate. Remove anchors which do not grip wood lath.
 - 4. Do not over-tighten or crack adjacent plaster
 - 5. Attach at approx. 6" on center, both directions, depending on conditions.
 - 6. Mist existing plaster prior to installing finish plaster.
 - 7. Provide at least 2 coats of finish coat plaster over screw and washer. Skim coat over adjacent plaster to provide smooth surface.

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3.9 CLEANING AND PROTECTING

- A. Remove temporary protection and enclosure of other work. Promptly remove plaster from door frames, windows, and other surfaces not to be plastered. Repair floors, walls, and other surfaces stained, marred, or otherwise damaged during plastering. When plastering is completed, remove unused materials, containers, and equipment and clean floors of plaster debris.
- B. Provide final protection and maintain conditions, in a manner acceptable to manufacturer and Installer, that ensure plaster work is without damage or deterioration at the time of Substantial Completion.

3.10 FINISHING

- A. Allow plaster to dry thoroughly before applying finish coatings. Provide adequate heat and/or ventilation, depending on season. **With maintenance of proper environmental conditions, allow plaster to cure for at least three (3) weeks prior to applying finish coats.**

END OF SECTION 092100

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SECTION 096400 - WOOD FLOORING RESTORATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Field finished wood flooring repairs
- B. Related Sections:

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: Showing extent of repair work and detail of each type of repair.
- C. Samples for Initial Selection: Manufacturer's color charts showing the full range of colors and finishes available for wood flooring.
- D. Samples for Verification: For each type of wood flooring repair material and accessory, with stain color and treatment required, approximately 12-inches (300 mm) long and of same thickness and material indicated for the Work and showing the full range of normal color and texture variations expected.

1.4 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A qualified manufacturer that is certified for chain of custody by an FSC-accredited certification body.
- B. Softwood Flooring: Comply with WCLIB No. 17 grading rules for species, grade, and cut.
- C. Build mockup of typical flooring repair as shown on Drawings including treatments and shaping of repair, if any.
 - 1. To set quality standards for sanding and application of field finishes, prepare finish mockup of floor area as shown on Drawings.
 - 2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.

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3. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver wood flooring materials in unopened cartons or bundles.
- B. Protect material from exposure to moisture. Do not deliver until after concrete, masonry, plaster, ceramic tile, and similar wet work is complete and dry.
- C. Store materials in a dry, warm, ventilated, weathertight location.

1.6 PROJECT CONDITIONS

- A. Conditioning period begins not less than seven days before wood flooring installation, is continuous through installation, and continues not less than seven days after wood flooring installation.
 1. Environmental Conditioning: Maintain an ambient temperature between **65 and 75 deg F (18 and 24 deg C)** and relative humidity planned for building occupants in spaces to receive wood flooring during the conditioning period.
 2. Wood Flooring Conditioning: Move wood flooring into spaces where it will be installed, no later than the beginning of the conditioning period.
 - a. Do not install flooring until it adjusts to relative humidity of, and is at same temperature as, space where it is to be installed.
 - b. Open sealed packages to allow wood flooring to acclimatize immediately on moving flooring into spaces in which it will be installed.
- B. After conditioning period, maintain relative humidity and ambient temperature planned for building occupants.

PART 2 - PRODUCTS

2.1 UN-FINISHED WOOD FLOORING REPAIRS

- A. Solid-Wood Flooring Repair Material: Kiln dried to 6 to 9 percent maximum moisture content, tongue and groove with finger jointed edge to join with existing flooring. Flooring repair material must be seasoned and stable prior to fabrication and installation.
 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Carlisle Wide Plank Floors
 - b. Aged Woods
 - c. The Woods Company

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2. Species and Grade: White Pine to be verified with architect in the field. Old Growth, re-sawn, salvaged graded for tight vertical grain.
 3. Cut: Plain sawn.
 4. Thickness: Match existing
 5. Finish: smooth finish.
 6. Edge: Tongue-and-groove.
 7. Face Width: Match existing.
 8. Lengths: Full length for length of repair.
 9. Fastening: match existing fastener type, installation and pattern.
- B. Finish System for all interior wood flooring repairs: Repairs to be custom finished to match the color and sheen of the existing flooring. Existing flooring to receive no treatment.
1. Stain: Penetrating and nonfading type oil stain.
 - a. Color: Provide samples to match adjacent existing flooring
 - b. Extra Materials: Provide 1 qt. of custom stain mix to Owner for future use.
 2. Finish: Waterlox Original Floor Finish.
 - a. Sheen: Match existing.
 - b. Coats: 3 coats
- C. Wood Filler: Compatible with finish system components and recommended by filler and finish manufacturers for use indicated. If required to match approved Samples, provide pigmented filler.

2.2 ACCESSORY MATERIALS

- A. Wood Gussett: As specified in Section 061000 "Rough Carpentry".
- B. Fasteners: Tremont Nail, 457 School Street, Mansfield, MA 02048.
 1. Common Standard Cut Nail of length required but not less than 2 ½". Match existing pattern and as recommended by manufacturer, but not less than that recommended in NWFA's "Installation Guidelines: Wood Flooring".

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas and conditions, with Installer present, for compliance with requirements for maximum moisture content, installation tolerances, and other conditions affecting performance of wood flooring.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

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3.2 PREPARATION

- A. Remove coatings, including curing compounds, and other substances on substrates that are incompatible with installation adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by manufacturer. Do not use solvents.
- B. Broom or vacuum clean substrates to be covered immediately before product installation. After cleaning, examine substrates for moisture, alkaline salts, carbonation, or dust. Proceed with installation only after unsatisfactory conditions have been corrected.

3.3 INSTALLATION

Comply with flooring manufacturer's written installation instructions, but not less than applicable recommendations in NWFA's "Installation Guidelines: Wood Flooring."

- A. Provide expansion space at walls and other obstructions and terminations of flooring of not less than **3/8 inch**.
- B. Solid-Wood Flooring: Face nail flooring to substrate.
 - 1. For flooring of face width more than **3 inches (75 mm)**:
 - a. At location to be covered by baseboard, install countersunk screws at each end of each piece in addition to face nailing.
 - b. Install no fewer than two face nails at each end of each piece, spaced not more than **16 inches (406 mm)** along length of each piece.

3.4 FIELD FINISHING

- A. Hand sand new flooring repairs to remove offsets and to blend thickness and profile to closely match the board to which it is being attached. Vacuum and tack with a clean cloth immediately before applying stains.
 - 1. Comply with applicable recommendations in NWFA's "Installation Guidelines: Wood Flooring."
 - 2. Flooring repairs to be hand sanded only to avoid over-sanding on to existing historic flooring.
- B. Fill and repair wood flooring seams and defects.
- C. Apply floor-finish materials in number of coats recommended by finish manufacturer for application indicated, but not less than one coat of floor sealer and three finish coats.
 - 1. Apply stains to achieve an even color distribution matching approved Samples and existing adjacent flooring.
 - 2. For water-based finishes, use finishing methods recommended by finish manufacturer to minimize grain raise.

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- D. Cover wood flooring before finishing.
- E. Do not cover wood flooring after finishing until finish reaches full cure, and not before seven days after applying last finish coat.

3.5 PROTECTION

- A. Protect installed wood flooring during remainder of construction period with covering of heavy kraft paper or other suitable material. Do not use plastic sheet or film that might cause condensation.
 - 1. Do not move heavy and sharp objects directly over kraft-paper-covered wood flooring. Protect flooring with plywood or hardboard panels to prevent damage from storing or moving objects over flooring.

END OF SECTION 096400

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SECTION 096400 - WOOD FLOORING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Field finished wood flooring repairs
- B. Related Sections:

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: Showing extent of repair work and detail of each type of repair.
- C. Samples for Initial Selection: Manufacturer's color charts showing the full range of colors and finishes available for wood flooring.
- D. Samples for Verification: For each type of wood flooring repair material and accessory, with stain color and treatment required, approximately 12-inches (300 mm) long and of same thickness and material indicated for the Work and showing the full range of normal color and texture variations expected.

1.4 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A qualified manufacturer that is certified for chain of custody by an FSC-accredited certification body.
- B. Softwood Flooring: Comply with WCLIB No. 17 grading rules for species, grade, and cut.
- C. Build mockup of typical flooring repair as shown on Drawings including treatments and shaping of repair, if any.
 - 1. To set quality standards for sanding and application of field finishes, prepare finish mockup of floor area as shown on Drawings.
 - 2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.

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3. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver wood flooring materials in unopened cartons or bundles.
- B. Protect material from exposure to moisture. Do not deliver until after concrete, masonry, plaster, ceramic tile, and similar wet work is complete and dry.
- C. Store materials in a dry, warm, ventilated, weathertight location.

1.6 PROJECT CONDITIONS

- A. Conditioning period begins not less than seven days before wood flooring installation, is continuous through installation, and continues not less than seven days after wood flooring installation.
 1. Environmental Conditioning: Maintain an ambient temperature between **65 and 75 deg F (18 and 24 deg C)** and relative humidity planned for building occupants in spaces to receive wood flooring during the conditioning period.
 2. Wood Flooring Conditioning: Move wood flooring into spaces where it will be installed, no later than the beginning of the conditioning period.
 - a. Do not install flooring until it adjusts to relative humidity of, and is at same temperature as, space where it is to be installed.
 - b. Open sealed packages to allow wood flooring to acclimatize immediately on moving flooring into spaces in which it will be installed.
- B. After conditioning period, maintain relative humidity and ambient temperature planned for building occupants.

PART 2 - PRODUCTS

2.1 UN-FINISHED WOOD FLOORING REPAIRS

- A. Solid-Wood Flooring Repair Material: Kiln dried to 6 to 9 percent maximum moisture content, tongue and groove with finger jointed edge to join with existing flooring. Flooring repair material must be seasoned and stable prior to fabrication and installation.
 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Carlisle Wide Plank Floors
 - b. Aged Woods
 - c. The Woods Company

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2. Species and Grade: White Pine to be verified with architect in the field. Old Growth, re-sawn, salvaged graded for tight vertical grain.
 3. Cut: Plain sawn.
 4. Thickness: Match existing
 5. Finish: smooth finish.
 6. Edge: Tongue-and-groove.
 7. Face Width: Match existing.
 8. Lengths: Full length for length of repair.
 9. Fastening: match existing fastener type, installation and pattern.
- B. Finish System for all interior wood flooring repairs: Repairs to be custom finished to match the color and sheen of the existing flooring. Existing flooring to receive no treatment.
1. Stain: Penetrating and nonfading type oil stain.
 - a. Color: Provide samples to match adjacent existing flooring
 - b. Extra Materials: Provide 1 qt. of custom stain mix to Owner for future use.
 2. Finish: Waterlox Original Floor Finish.
 - a. Sheen: Match existing.
 - b. Coats: 3 coats
- C. Wood Filler: Compatible with finish system components and recommended by filler and finish manufacturers for use indicated. If required to match approved Samples, provide pigmented filler.

2.2 ACCESSORY MATERIALS

- A. Wood Gussett: As specified in Section 061000 "Rough Carpentry".
- B. Fasteners: Tremont Nail, 457 School Street, Mansfield, MA 02048.
 1. Common Standard Cut Nail of length required but not less than 2 ½". Match existing pattern and as recommended by manufacturer, but not less than that recommended in NWFA's "Installation Guidelines: Wood Flooring".

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas and conditions, with Installer present, for compliance with requirements for maximum moisture content, installation tolerances, and other conditions affecting performance of wood flooring.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

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3.2 PREPARATION

- A. Remove coatings, including curing compounds, and other substances on substrates that are incompatible with installation adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by manufacturer. Do not use solvents.
- B. Broom or vacuum clean substrates to be covered immediately before product installation. After cleaning, examine substrates for moisture, alkaline salts, carbonation, or dust. Proceed with installation only after unsatisfactory conditions have been corrected.

3.3 INSTALLATION

Comply with flooring manufacturer's written installation instructions, but not less than applicable recommendations in NWFA's "Installation Guidelines: Wood Flooring."

- A. Provide expansion space at walls and other obstructions and terminations of flooring of not less than **3/8 inch**.
- B. Solid-Wood Flooring: Face nail flooring to substrate.
 - 1. For flooring of face width more than **3 inches (75 mm)**:
 - a. At location to be covered by baseboard, install countersunk screws at each end of each piece in addition to face nailing.
 - b. Install no fewer than two face nails at each end of each piece, spaced not more than **16 inches (406 mm)** along length of each piece.

3.4 FIELD FINISHING

- A. Hand sand new flooring repairs to remove offsets and to blend thickness and profile to closely match the board to which it is being attached. Vacuum and tack with a clean cloth immediately before applying stains.
 - 1. Comply with applicable recommendations in NWFA's "Installation Guidelines: Wood Flooring."
 - 2. Flooring repairs to be hand sanded only to avoid over-sanding on to existing historic flooring.
- B. Fill and repair wood flooring seams and defects.
- C. Apply floor-finish materials in number of coats recommended by finish manufacturer for application indicated, but not less than one coat of floor sealer and three finish coats.
 - 1. Apply stains to achieve an even color distribution matching approved Samples and existing adjacent flooring.
 - 2. For water-based finishes, use finishing methods recommended by finish manufacturer to minimize grain raise.

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- D. Cover wood flooring before finishing.
- E. Do not cover wood flooring after finishing until finish reaches full cure, and not before seven days after applying last finish coat.

3.5 PROTECTION

- A. Protect installed wood flooring during remainder of construction period with covering of heavy kraft paper or other suitable material. Do not use plastic sheet or film that might cause condensation.
 - 1. Do not move heavy and sharp objects directly over kraft-paper-covered wood flooring. Protect flooring with plywood or hardboard panels to prevent damage from storing or moving objects over flooring.

END OF SECTION 096400

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SECTION 099123 - INTERIOR PAINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Primers.
 - 2. Water-based finish coatings.
- B. Related Requirements:
 - 1. Section 092100 "Lath and Plaster" for painting of areas of patched lath and plaster.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product. Include preparation requirements and application instructions.
 - 1. Include preparation requirements and application instructions.
 - 2. Indicate VOC content.
- B. Samples: For each type of topcoat product.
- C. Samples for Initial Selection: For each type of topcoat product.
- D. Samples for Verification: For each type of paint system and each color and gloss of topcoat.
 - 1. Submit Samples on rigid backing, 8 inches (200 mm) square.
 - 2. Apply coats on Samples in steps to show each coat required for system.
 - 3. Label each coat of each Sample.
 - 4. Label each Sample for location and application area.
- E. Product Schedule: Use same designations indicated on Drawings and in the Interior Painting Schedule to cross-reference paint systems specified in this Section. Include color designations.

1.4 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

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1. Paint Products: 5 percent, but not less than 1 gal. (3.8 L) of each material and color applied.

1.5 QUALITY ASSURANCE

- A. Mockups: Apply mockups of each paint system indicated and each color and finish selected to verify preliminary selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
1. Architect will select one surface to represent surfaces and conditions for application of each paint system.
 - a. Vertical and Horizontal Surfaces: Provide samples of at least 10 sq. ft. (.9 sq. m).
 - b. Other Items: Architect will designate items or areas required.
 2. Final approval of color selections will be based on mockups.
 - a. If preliminary color selections are not approved, apply additional mockups of additional colors selected by Architect at no added cost to Owner.
 3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
 4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F (7 deg C).
1. Maintain containers in clean condition, free of foreign materials and residue.
 2. Remove rags and waste from storage areas daily.

1.7 FIELD CONDITIONS

- A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F (10 and 35 deg C).
- B. Do not apply paints when relative humidity exceeds 85 percent; at temperatures of less than 5 deg F (3 deg C) above the dew point; or to damp or wet surfaces.

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PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Benjamin Moore & Co.
 2. Pratt & Lambert.
 3. Sherwin-Williams Company (The).

2.2 PAINT PRODUCTS, GENERAL

- A. Material Compatibility:
1. Materials for use within each paint system shall be compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
 2. For each coat in a paint system, products shall be recommended in writing by topcoat manufacturers for use in paint system and on substrate indicated.
- B. Colors: To match existing color of area to be repainted.

2.3 PRIMERS

- A. Interior Latex Primer Sealer: Water-based latex sealer used on new and existing interior plaster, gypsum wallboard surfaces and wood.
1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Benjamin Moore & Co.; Multi-purpose Latex Primer, N023.
 - b. Pratt & Lambert; Pro-Hide Interior Primer and Sealer.
 - c. Sherwin-Williams Company (The); Multi-purpose Interior/Exterior Latex Primer/Sealer.

2.4 WATER-BASED FINISH COATS

- A. Interior, Latex, Flat: Pigmented, water-based paint for use on primed/sealed interior plaster and gypsum board ceilings.
1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to the following:
 - a. Benjamin Moore & Co.; Waterborne Ceiling Paint Ultra-Flat (508).
 - b. Pratt & Lambert; Skylight Interior Waterborne Ceiling Paint.
 - c. Sherwin-Williams Company (The); Eminence High Performance Ceiling Paint.
 2. Gloss and Sheen Level: Manufacturer's standard flat finish.

Structural Repairs and Electrical Upgrades to the
Burrowes Mansion
94 Main Street, Matawan, NJ

- B. Interior, Latex, Flat: Pigmented, water-based paint for use on primed/sealed interior plaster and gypsum board walls.
1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to the following:
 - a. Benjamin Moore & Co.; Regal Select Interior Paint – Flat (547).
 - b. Pratt & Lambert; Accolade Interior Premium Paint – Flat.
 - c. Sherwin-Williams Company (The); Emerald Interior Acrylic Latex Paint – Flat.
 2. Gloss and Sheen Level: Manufacturer's standard flat finish.
- C. Interior, Latex, Semigloss: Pigmented, water-based paint for use on primed/sealed interior wood.
1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Benjamin Moore & Co.; Regal Select Interior Paint – Semi-Gloss (551).
 - b. Pratt & Lambert; Accolade Interior Premium Paint – Semi-Gloss.
 - c. Sherwin-Williams Company (The); Emerald Interior Acrylic Latex Paint – Semi-Gloss.
 2. Gloss Level: Manufacturer's standard semigloss finish.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
- B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
1. Wood: 15 percent.
 2. Gypsum Board: 12 percent.
 3. Plaster: 12 percent.
- C. Gypsum Board Substrates: Verify that finishing compound is sanded smooth.
- D. Plaster Substrates: Verify that plaster is fully cured.
- E. Verify suitability of substrates, including surface conditions and compatibility, with existing finishes and primers.
- F. Proceed with coating application only after unsatisfactory conditions have been corrected.
1. Application of coating indicates acceptance of surfaces and conditions.

Structural Repairs and Electrical Upgrades to the
Burrowes Mansion
94 Main Street, Matawan, NJ

3.2 PREPARATION

- A. Comply with manufacturer's written instructions and recommendations applicable to substrates and paint systems indicated.
- B. Dey Mansion is a National Register listed historic site. The building and its' collections are very significant and must be properly protected through all phases of preparation and painting. Dust from preparation must be contained within the immediate work area. All surfaces must be fully protected from dust collection and paint splatters and spills.
- C. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.
 - 1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.
- D. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.
 - 1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.
- E. Wood Substrates:
 - 1. Scrape and clean knots, and apply coat of knot sealer before applying primer.
 - 2. Sand surfaces that will be exposed to view, and dust off.
 - 3. Prime edges, ends, faces, undersides, and backsides of wood.
 - 4. After priming, fill holes and imperfections in the finish surfaces with putty or plastic wood filler. Sand smooth when dried and re-prime area.

3.3 INSTALLATION

- A. Apply paints according to manufacturer's written instructions.
 - 1. Use applicators and techniques suited for paint and substrate indicated. All paints on exposed wood surfaces are to be applied by brush.
 - 2. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
 - 3. Paint front and backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.
 - 4. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
 - 5. Primers specified in painting schedules may be omitted on items that are factory primed or factory finished if acceptable to topcoat manufacturers.
- B. Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Tint undercoats to match color of topcoat, but provide sufficient difference in shade of undercoats to distinguish each separate coat.

Structural Repairs and Electrical Upgrades to the
Burrowes Mansion
94 Main Street, Matawan, NJ

- C. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.
- D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

3.4 FIELD QUALITY CONTROL

- A. Dry-Film Thickness Testing: Owner may engage the services of a qualified testing and inspecting agency to inspect and test paint for dry-film thickness.
 - 1. Contractor shall touch up and restore painted surfaces damaged by testing.
 - 2. If test results show that dry-film thickness of applied paint does not comply with paint manufacturer's written recommendations, Contractor shall pay for testing and apply additional coats as needed to provide dry-film thickness that complies with paint manufacturer's written recommendations.

3.5 CLEANING AND PROTECTION

- A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
 - 1. Do not clean equipment with free-draining water and prevent solvents, thinners, cleaners, and other contaminants from entering into waterways, sanitary and storm drain systems, and ground.
 - 2. Dispose of contaminants in accordance with requirements of authorities having jurisdiction.
 - 3. Allow empty paint cans to dry before disposal.
- B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
- C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.
- D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.6 INTERIOR PAINTING SCHEDULE

- A. Finish Carpentry: Wood trim.
 - 1. Latex over Latex Primer System: Existing Previously Painted Surfaces.
 - a. Prime Coat: Interior latex primer for wood.
 - b. Intermediate Coat: Matching topcoat.

Structural Repairs and Electrical Upgrades to the
Burrowes Mansion
94 Main Street, Matawan, NJ

- c. Topcoat: Interior, latex, semigloss.
- d. Color: match existing

B. Gypsum Board and Plaster Substrates:

1. Latex over Latex Sealer System: Walls and Ceilings

- a. Prime Coat: Interior latex primer sealer.
- b. Intermediate Coat: Matching topcoat.
- c. Topcoat: Interior, latex, flat.
- d. Color: match existing

END OF SECTION 099123

Structural Repairs & Electrical Upgrades
Burrowes Mansion
Matawan, NJ

SECTION 105200 - FIRE-PROTECTION SPECIALTIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Portable fire extinguishers for use during construction and to remain at the site following completion of the work.
 - 2. One per floor, four (4) total.

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.
 - 1. Fire Extinguishers: Include rating and classification.
- B. Maintenance data.

1.4 QUALITY ASSURANCE

- A. NFPA Compliance: Fabricate and label fire extinguishers to comply with NFPA 10, "Portable Fire Extinguishers."
- B. Fire Extinguishers: Listed and labeled for type, rating, and classification by an independent testing agency acceptable to authorities having jurisdiction.

1.5 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of portable fire extinguishers that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Failure of hydrostatic test according to NFPA 10.
 - b. Faulty operation of valves or release levers.

Structural Repairs & Electrical Upgrades
Burrowes Mansion
Matawan, NJ

2. Warranty Period: Twelve years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:
 1. Manufacturers: Subject to compliance with requirements, provide products by one of the manufacturers specified.

2.2 MATERIALS

2.3 PORTABLE FIRE EXTINGUISHERS

- A. Manufacturers:
 1. Buckeye Fire Equipment Company.
 2. General Fire Extinguisher Corporation.
 3. Kidde Fyrnetics.
 4. Watrous; Div. of American Specialties, Inc.
- B. General: Provide fire extinguishers of type, size, and capacity indicated.
 1. Instruction Labels: Include pictorial marking system complying with NFPA 10, Appendix B and bar coding for documenting fire extinguisher location, inspections, maintenance, and recharging.
- C. Multipurpose Dry-Chemical Type in Steel Container: UL-rated 4-A:60-B:C, 10-lb (4.5-kg) nominal capacity, with monoammonium phosphate-based dry chemical in enameled-steel container, color red.
 1. Provide one extinguisher per floor. Location to be set in field by Architect.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install fire-protection specialties in locations where work is being completed. Do not mount fire extinguishers to any building elements.
- B. Provide quantity indicated on drawings, or, if not indicated, provide a minimum of one fire extinguisher per floor where work is being undertaken.

END OF SECTION 105200

STRUCTURAL REPAIRS & ELECTRICAL UPGRADES TO THE BURROWES MANSION

THE BOROUGH OF MATAWAN 94 MAIN STREET, MATAWAN, NEW JERSEY

STRUCTURAL ENGINEER:
HARRISON – HAMNETT, P.C.
Consulting Structural Engineers
40 Knowles Street, Pennington, NJ 08534

ARCHITECT:
HMRARCHITECTS
821 ALEXANDER ROAD - SUITE 115
PRINCETON, NEW JERSEY 08540
609-452-1070 - HMR-ARCHITECTS.COM

ELECTRICAL ENGINEER:
KELTER AND GILLIGO
Consulting Engineers
14 Washington Road, Suite 221
Princeton Junction, NJ 08550

ISSUED FOR BID - AUGUST 1, 2022

GENERAL NOTE:

CONTRACTOR TO VERIFY ALL CONDITIONS AND DIMENSIONS IN FIELD. REPORT ALL DISCREPANCIES IN THESE DRAWINGS AND RELATED SPECIFICATIONS TO ARCHITECT FOR RESOLUTION PRIOR TO START OF CONSTRUCTION. FAILURE TO VERIFY ALL CONDITIONS AFFECTING THE WORK AND FAILURE TO REPORT DISCREPANCIES WILL NOT RELIEVE THE CONTRACTOR OF COMPLETE COORDINATION OF ALL ASPECTS OF THE WORK.

BUILDING FACT:

THE MAJOR JOHN BURROWES MANSION IS LISTED ON THE NEW JERSEY AND NATIONAL REGISTER OF HISTORIC PLACES.

SCOPE OF WORK:

- REMOVE SELECT STRUCTURAL ELEMENTS IN BASEMENT.
- NEW PERIMETER FOUNDATION DRAINAGE IN BASEMENT ROOMS 001 & 002. CONNECT TO EXISTING SUMP PUMP.
- INSTALL NEW CONCRETE SLAB IN BASEMENT ROOMS 001 & 002.
- INSTALL NEW FOOTINGS AND STEEL COLUMNS IN BASEMENT ROOMS 001, 002, & 003.
- REPAIR STRUCTURAL FRAMING IN BASEMENT.
- REMOVE ALL EXISTING WIRING & RECEPTACLES. REMOVE SELECT FIXTURES.
- INSTALL ALL NEW WIRING & RECEPTACLES. INSTALL NEW FIXTURES & REWIRE REMAINING EXISTING FIXTURES.

ALTERNATES

1. REPAIR STRUCTURAL FRAMING AT ROOM 203 FLOOR.
2. INSTALL NEW CONCRETE SLAB IN BASEMENT ROOM 003.

APPLICABLE CODES:

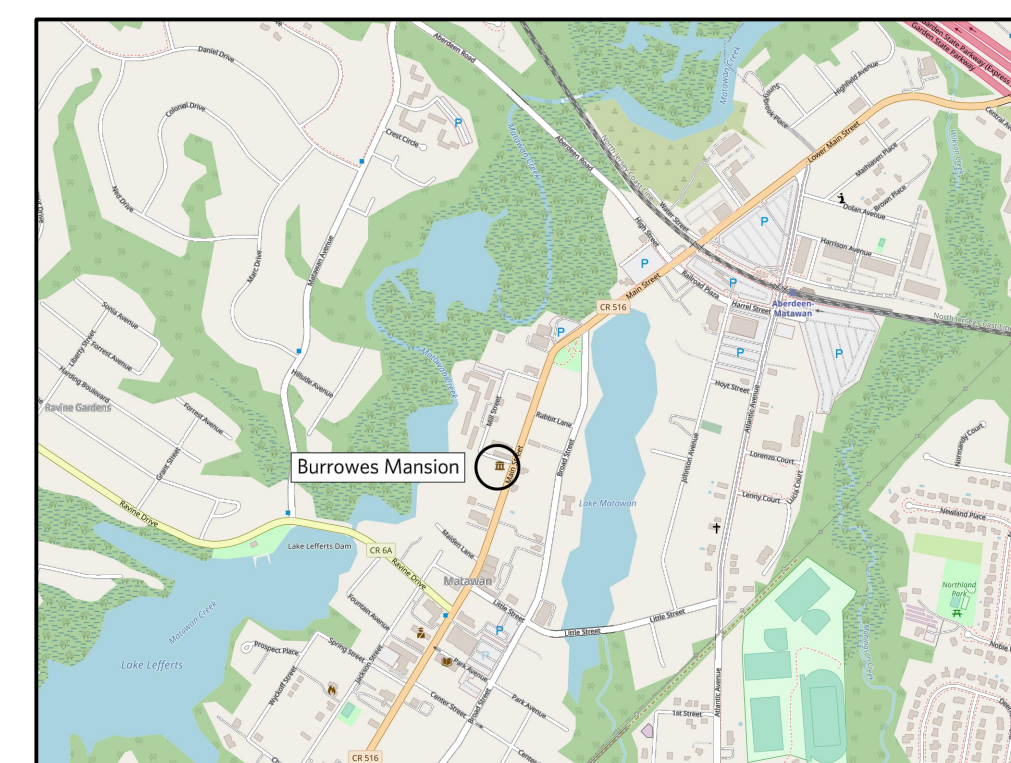
INTERNATIONAL BUILDING CODE 2018 - NJ EDITION
NATIONAL ELECTRICAL CODE (NFPA 70)
NATIONAL STANDARD PLUMBING CODE 2018 - NJ EDITION
NJ UCC REHABILITATION SUBCODE 5:23-6 - REFERENCED SECTIONS
5:23-6.33 HISTORIC BUILDINGS
REHAB CODE CATEGORIES: ALTERATION

DRAWING LIST:

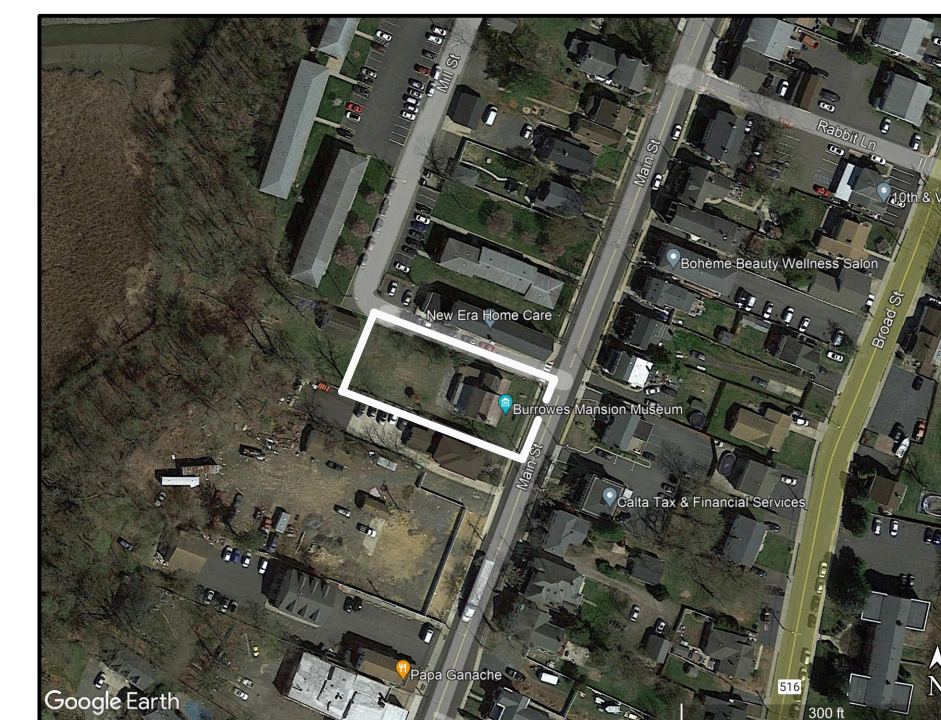
- CVR COVER
- AD-101 BASEMENT DEMO PLAN
- A-101 BASEMENT FOOTING AND FOUNDATION PLAN
- A-102 BASEMENT FRAMING PLAN
- A-103 1ST & 2ND FLOOR PLANS
- A-121 REFLECTED CEILING PLANS
- A-122 REFLECTED CEILING PLANS
- A-501 DETAILS
- A-502 DETAILS
- E-1 DEMO PLANS
- E-2 DEMO PLANS
- E-3 FLOOR PLANS
- E-4 FLOOR PLANS
- E-5 SCHEDULES, SYMBOLS, & DETAILS
- E-6 SPECIFICATIONS



VIEW OF MANSION FROM THE SOUTHEAST



LOCAL MAP



AERIAL SITE PHOTO

ARCHAEOLOGICAL MONITORING NOTES:

1. THE MAJOR JOHN BURROWES MANSION IS A LISTED HISTORIC SITE WITH ARCHAEOLOGICAL SIGNIFICANCE. CONTRACTOR MUST COORDINATE ALL SITE AND GROUND DISTURBANCE, INCLUDING WORK AT THE BASEMENT FLOOR INTERIOR OF THE HOUSE, WITH ARCHAEOLOGIST.
2. AN ARCHAEOLOGIST WHO MEETS THE PROFESSIONAL STANDARDS FOR ARCHAEOLOGY SET FORTH BY THE NATIONAL PARK SERVICE WILL BE PROVIDED BY THE CONTRACTOR TO OVERSEE THE WORK.
3. ARCHAEOLOGIST WILL PHOTOGRAPH, DOCUMENT AND DETAIL CONSTRUCTION EXCAVATION FOR THE INSTALLATION OF DRAINAGE, FOOTINGS, AND CONCRETE SLABS IN BASEMENT ROOMS 001, 002, AND 003. WHERE IDENTIFIED, ARCHAEOLOGIST WILL DOCUMENT CULTURAL FEATURES THROUGH PHOTOGRAPHY AND SCALED LINE DRAWINGS. ARCHAEOLOGIST MAY ALSO INVESTIGATE CULTURAL FEATURES THROUGH HAND EXCAVATION IN THE FORM OF ONE (1) THREE-FOOT SQUARE EXCAVATION UNIT. DOCUMENTATION OF OPEN EXCAVATIONS AND CULTURAL FEATURES MAY ENTAIL BRIEF WORK STOPPAGE AT PARTICULAR LOCATIONS UNTIL DOCUMENTATION HAS BEEN COMPLETED. IT IS ASSUMED THAT A TOTAL OF 24 HOURS WILL BE SUFFICIENT TO DOCUMENT IDENTIFIED FEATURES.
4. A PROJECT START-UP MEETING WILL BE HELD ON SITE WITH THE CONTRACTOR, ARCHITECT AND ARCHAEOLOGIST TO DISCUSS SCOPE OF ARCHAEOLOGICAL MONITORING AND TO CONFIRM PROCEDURES AND CONDUCT.
5. CONTRACTOR WILL NOTIFY ARCHITECT AND ARCHAEOLOGIST AT LEAST THREE (3) WORKING DAYS IN ADVANCE OF CONSTRUCTION ACTIVITIES RELATED TO SITE DISTURBANCES.
6. A DESIGNATED REPRESENTATIVE OF THE CONTRACTOR SHALL BE ON-SITE AT ALL TIMES DURING ARCHAEOLOGICAL MONITORING. MONITORING WORK WILL BE PERFORMED DURING CONTRACTOR'S NORMAL WORKING HOURS. DECISIONS TO TEMPORARILY HALT WORK TO DOCUMENT CONSTRUCTION TRENCHES WILL BE MADE IN CONSULTATION WITH CONTRACTOR'S REPRESENTATIVE AND ARCHITECT.

ISSUED FOR BID - AUGUST 1, 2022

STRUCTURAL REPAIRS & ELECTRICAL UPGRADES TO THE
BURROWES MANSION
THE BOROUGH OF MATAWAN
94 MAIN STREET, MATAWAN, MONMOUTH COUNTY, NJ

NO.	REVISIONS	DATE

CVR

HMRARCHITECTS
KELTER & GILLIGO CONSULTING ENG. HARRISON - HAMNETT, P.C.
14 WASHINGTON RD, PRINCETON, NJ 08550
609-799-8336 Fax: 609-275-9306

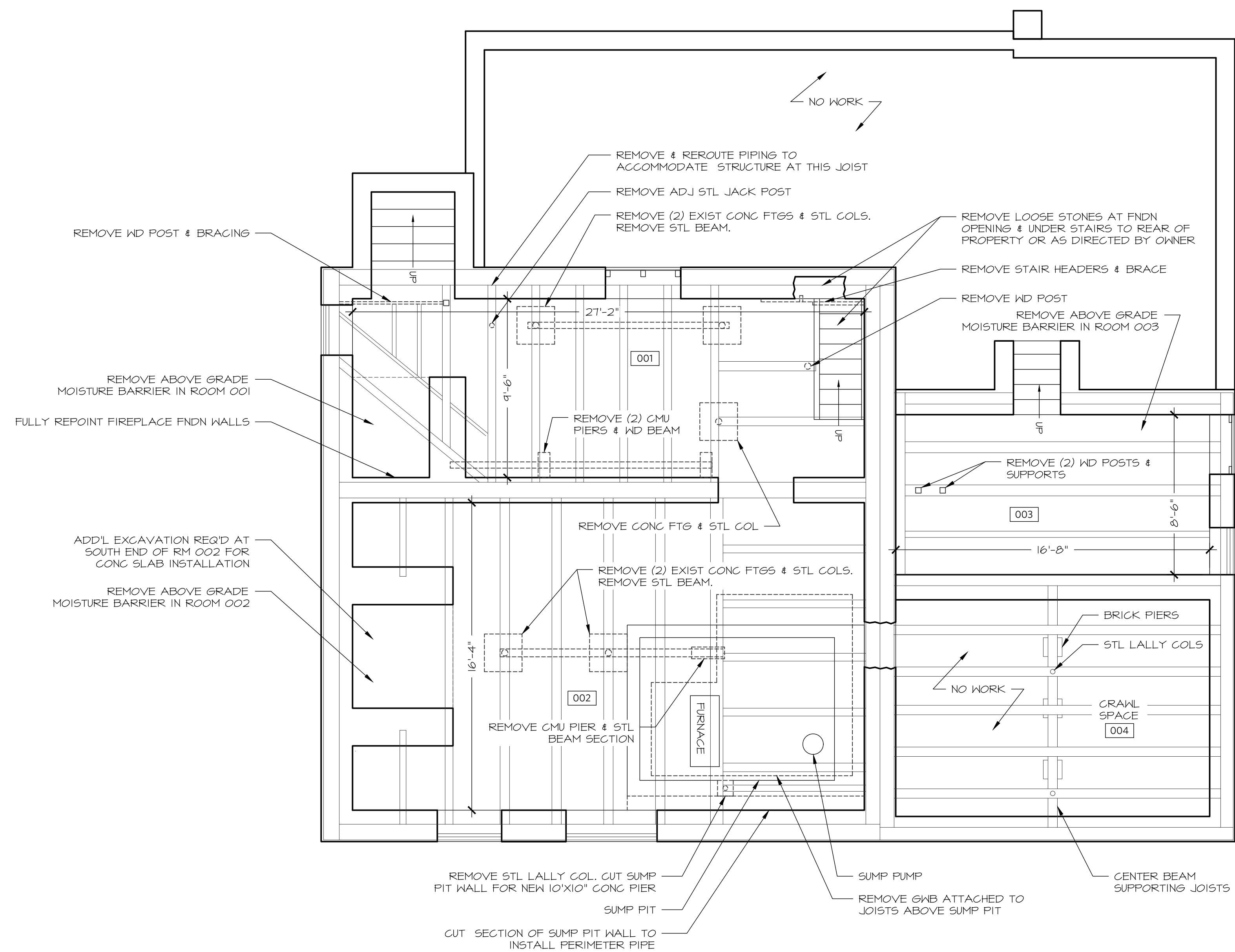
821 ALEXANDER ROAD - SUITE 115
PRINCETON, NEW JERSEY 08540
609-452-1070 - HMR-ARCHITECTS.COM

SCALE: AS NOTED
DRAWN BY: OFFICE
DATE: 8/1/22

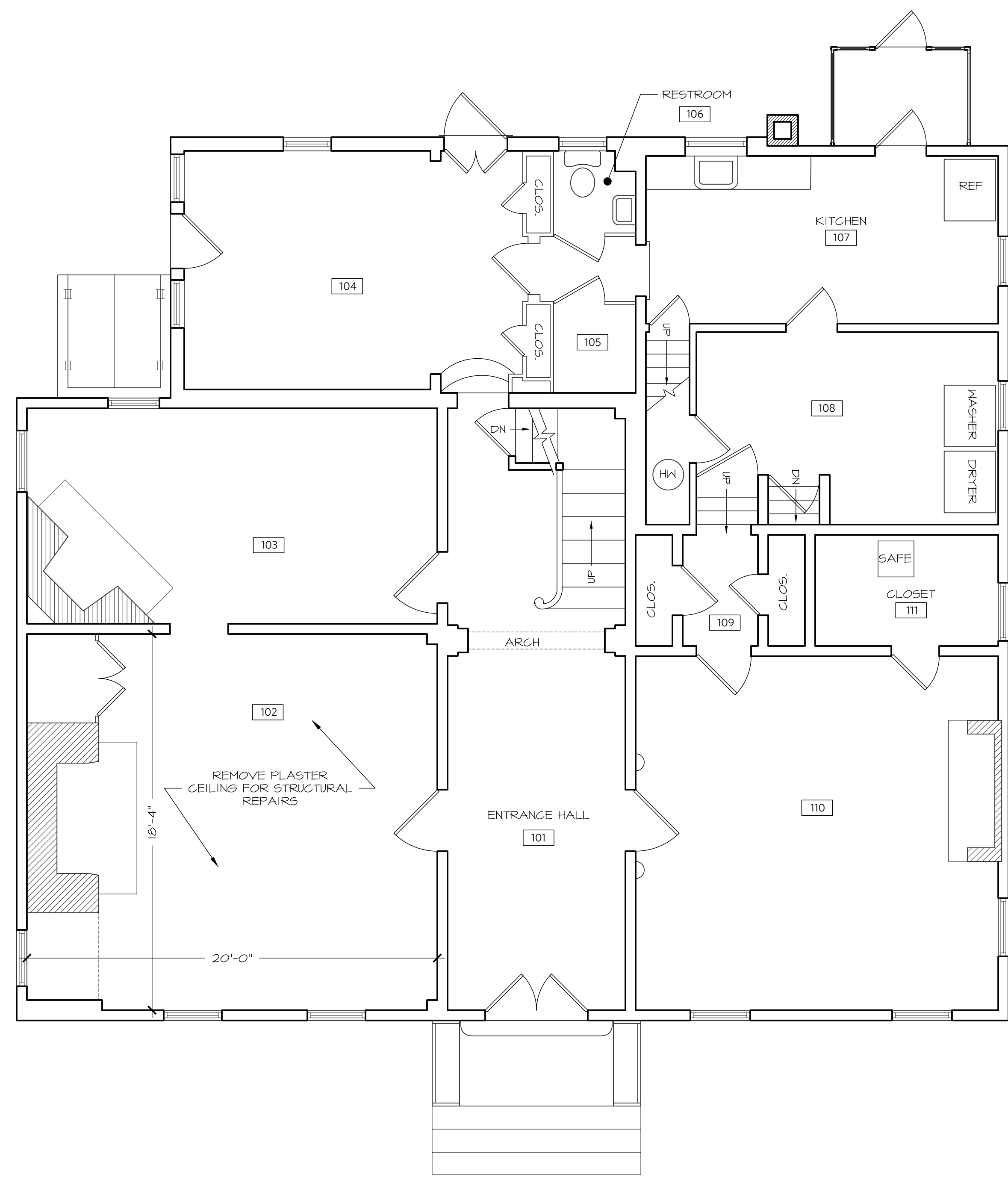
CVR

COVER

ERIC HULTMANN
214-209-2720



1 BASEMENT DEMO PLAN
SCALE: 1/4" = 1'-0"



2 FIRST FLOOR DEMO PLAN
SCALE: 1/4" = 1'-0"

- GENERAL NOTES -
1. CONTRACTOR TO VERIFY ALL CONDITIONS & DIMENSIONS IN FIELD. REPORT ALL DISCREPANCIES IN THESE DRAWINGS & RELATED SPECIFICATIONS TO ARCHITECT FOR RESOLUTION PRIOR TO START OF CONSTRUCTION. FAILURE TO VERIFY ALL CONDITIONS AFFECTING THE WORK & FAILURE TO REPORT DISCREPANCIES WILL NOT RELIEVE THE CONTRACTOR OF COMPLETE COORDINATION OF ALL ASPECTS OF THE WORK.
 2. ALL FRAMING CONDITIONS AND DIMENSIONS ARE APPROXIMATE. CONTRACTOR TO VERIFY CONDITIONS AND DIMENSIONS IN FIELD. REPORT ALL DISCREPANCIES & CONDITIONS THAT WOULD PREVENT SUCCESSFUL INSTALLATION OF PROPOSED REPAIRS TO ARCHITECT FOR RESOLUTION PRIOR TO START OF CONSTRUCTION.
 3. INSTALL TEMPORARY SHORING AT LOCATIONS OF REMOVED STRUCTURAL ELEMENTS.
 4. REMOVE & REROUTE EXISTING WIRING & PIPING AS NEEDED TO ACCOMMODATE STRUCTURAL WORK.
 5. NOTIFY ARCHITECT OF DETERIORATED WOOD STRUCTURAL ELEMENTS.

ISSUED FOR BID - AUGUST 1, 2022

STRUCTURAL REPAIRS & ELECTRICAL UPGRADES TO THE
BURROWES MANSION
THE BOROUGH OF MATAWAN
94 MAIN STREET, MATAWAN, MONMOUTH COUNTY, NJ

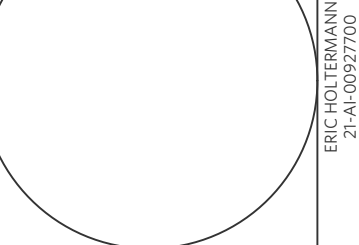
NO.	REVISIONS	DATE

AD-101

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609-452-1070 - HMR-ARCHITECTS.COM

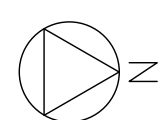
KELTER & GILLIGO CONSULTING ENG. HARRIS ON - HARRIS ON, P.C.
100 WASHINGTON RD, PRINCETON, NJ 08540
609-779-8228 FAX: 609-215-2308 609-215-1808 FAX: 609-215-1809

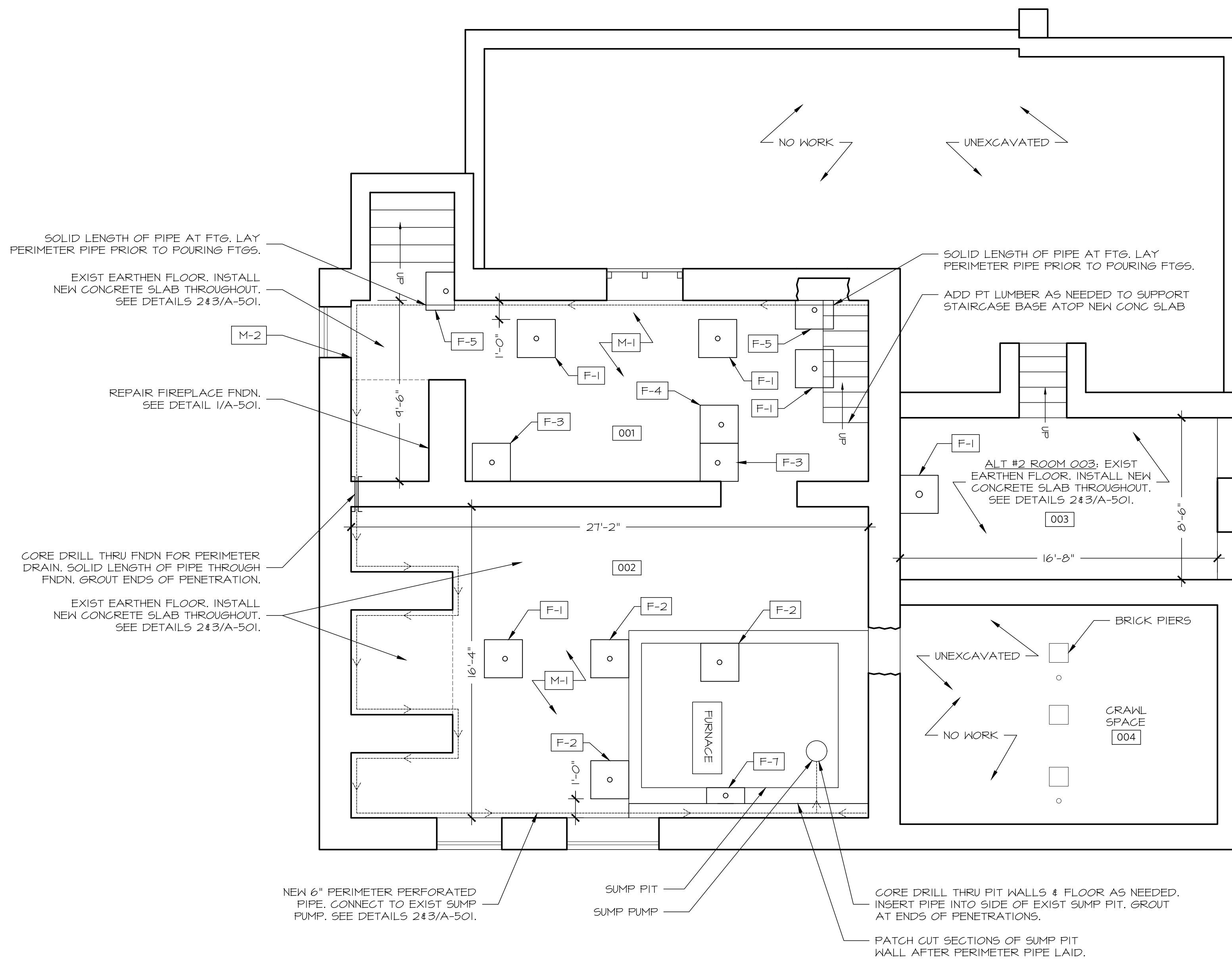


BASEMENT DEMO PLAN

AD-101

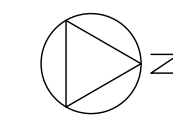
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DATE: 8/7/22





1 BASEMENT FTG & FNDN PLAN

SCALE: 1/4" = 1'-0"



- GENERAL NOTES -

- CONTRACTOR TO VERIFY ALL CONDITIONS & DIMENSIONS IN FIELD. REPORT ALL DISCREPANCIES IN THESE DRAWINGS & RELATED SPECIFICATIONS TO ARCHITECT FOR RESOLUTION PRIOR TO START OF CONSTRUCTION. FAILURE TO VERIFY ALL CONDITIONS AFFECTING THE WORK & FAILURE TO REPORT DISCREPANCIES WILL NOT RELIEVE THE CONTRACTOR OF COMPLETE COORDINATION OF ALL ASPECTS OF THE WORK.
- ALL FRAMING CONDITIONS AND DIMENSIONS ARE APPROXIMATE. CONTRACTOR TO VERIFY CONDITIONS AND DIMENSIONS IN FIELD. REPORT ALL DISCREPANCIES & CONDITIONS THAT WOULD PREVENT SUCCESSFUL INSTALLATION OF PROPOSED REPAIRS TO ARCHITECT FOR RESOLUTION PRIOR TO START OF CONSTRUCTION.
- INSTALL TEMPORARY SHORING AT LOCATIONS OF REMOVED STRUCTURAL ELEMENTS.
- REMOVE & REROUTE EXISTING WIRING & PIPING AS NEEDED TO ACCOMMODATE STRUCTURAL WORK.
- NOTIFY ARCHITECT OF DETERIORATED WOOD STRUCTURAL ELEMENTS.

- MASONRY NOTES -

- SEE 5/A-501 FOR REPOINTING DETAIL.
- M-1 REPOINT ALL WALLS IN ROOMS 001 & 002 4' ABOVE SLAB FINISH FLOOR LEVEL & AT AREAS UNCOVERED DURING EXCAVATION FOR NEW SLAB.
- M-2 FULLY REPOINT SOUTH WALL IN ROOM 001.

- FOOTING & COLUMN SCHEDULE -

- SEE 4/A-501 FOR DETAIL. TYP FOR F-1 THRU F-5.
 - SEE 7/A-501 FOR DETAIL FOR F-6.
- F-1: NEW CONC 24"X24"X12" FTG & NEW 3"Ø STL COL.
- F-2: NEW CONC 24"X24"X12" FTG & NEW 3"Ø STL COL. POUR AGAINST EXIST SUMP PIT WALL W/ FILLED EXPANSION JOINT.
- F-3: NEW CONC 24"X24"X12" FTG & NEW 3"Ø STL COL. POUR AGAINST EXIST FNDN & ADJACENT FTG W/ FILLED EXPANSION JOINT.
- F-4: NEW CONC 24"X24"X12" FTG & NEW 3"Ø STL COL. POUR AGAINST ADJACENT FTG W/ FILLED EXPANSION JOINT.
- F-5: NEW CONC 18"X24"X12" FTG & NEW 3"Ø STL COL. POUR AGAINST FNDN W/ FILLED EXPANSION JOINT.
- F-6: NEW FTG ATOP SUMP PIT WALL & NEW 3"Ø STL COL.

- BEAM & PLATE SCHEDULE -

- SEE 4/A-501 FOR CONNECTION DETAIL.
- B-1: NEW W 4X13 STL BEAM
- PL-1: 1/2"X6X10 STL TOP PLATE
- PL-2: 3/8"X4X6 STL TOP PLATE
- PL-3: 1/2"X8X10 STL TOP PLATE
- PL-4: 1/2"X4X6 STL TOP PLATE

ISSUED FOR BID - AUGUST 1, 2022

STRUCTURAL REPAIRS & ELECTRICAL UPGRADES TO THE
BURROWES MANSION
 THE BOROUGH OF MATAWAN
 94 MAIN STREET, MATAWAN, MONMOUTH COUNTY, NJ

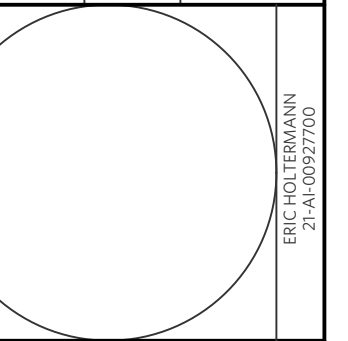
NO.	REVISIONS	DATE

A-101

HMRARCHITECTS

821 ALEXANDER ROAD - SUITE 115
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KELTER & GILLIGO CONSULTING ENG. HARRISON HARRINGTON, P.C.
 609-779-8228 FAX: 609-215-3200 609-818-1808 FAX: 609-818-1809

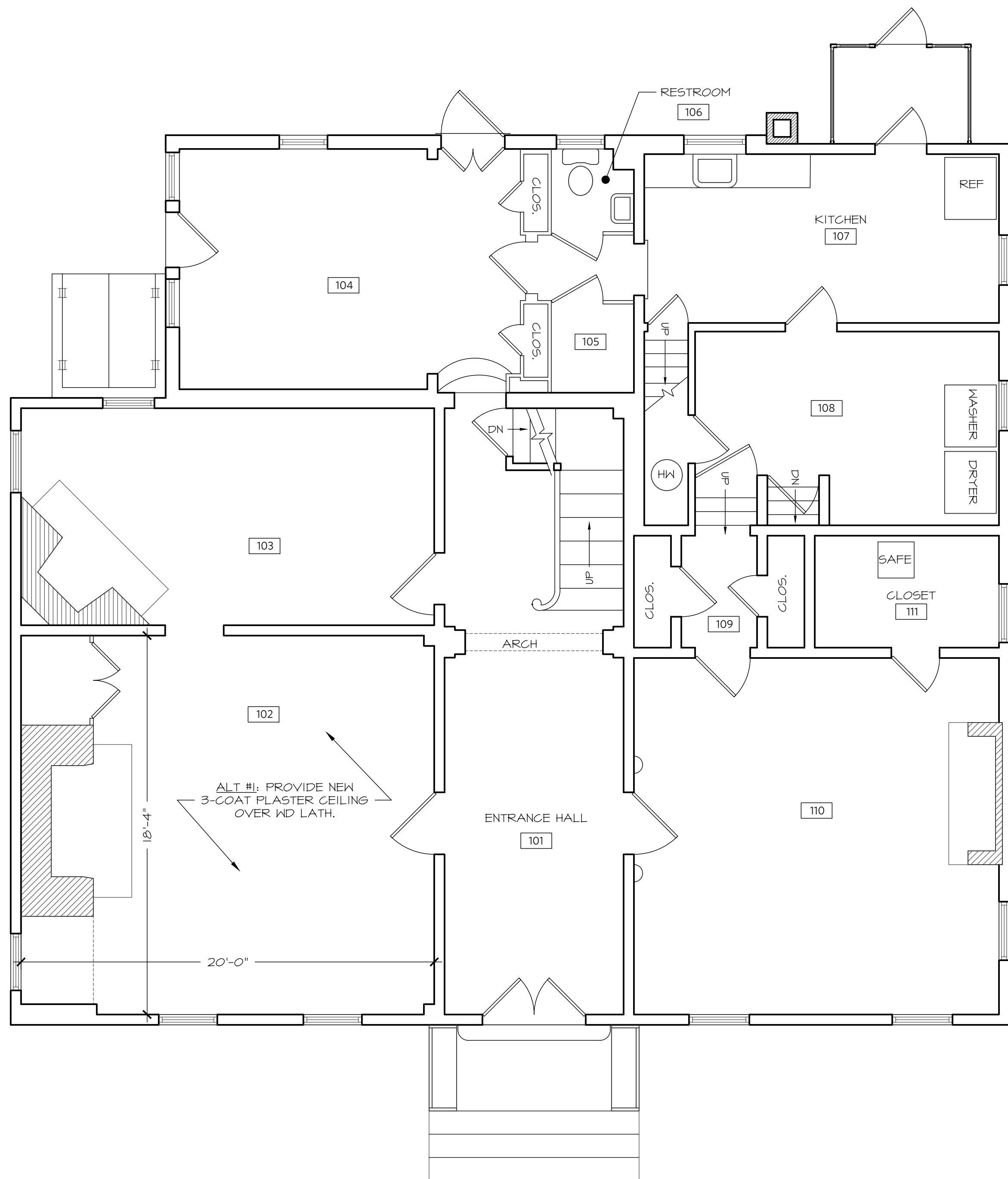


ERIC HOLZBAMANN
 STATE OF NEW JERSEY
 NO. 120000001

SCALE: 1/4" = 1'-0"
 DRAWN BY: KLS/SL
 DATE: 8/7/22

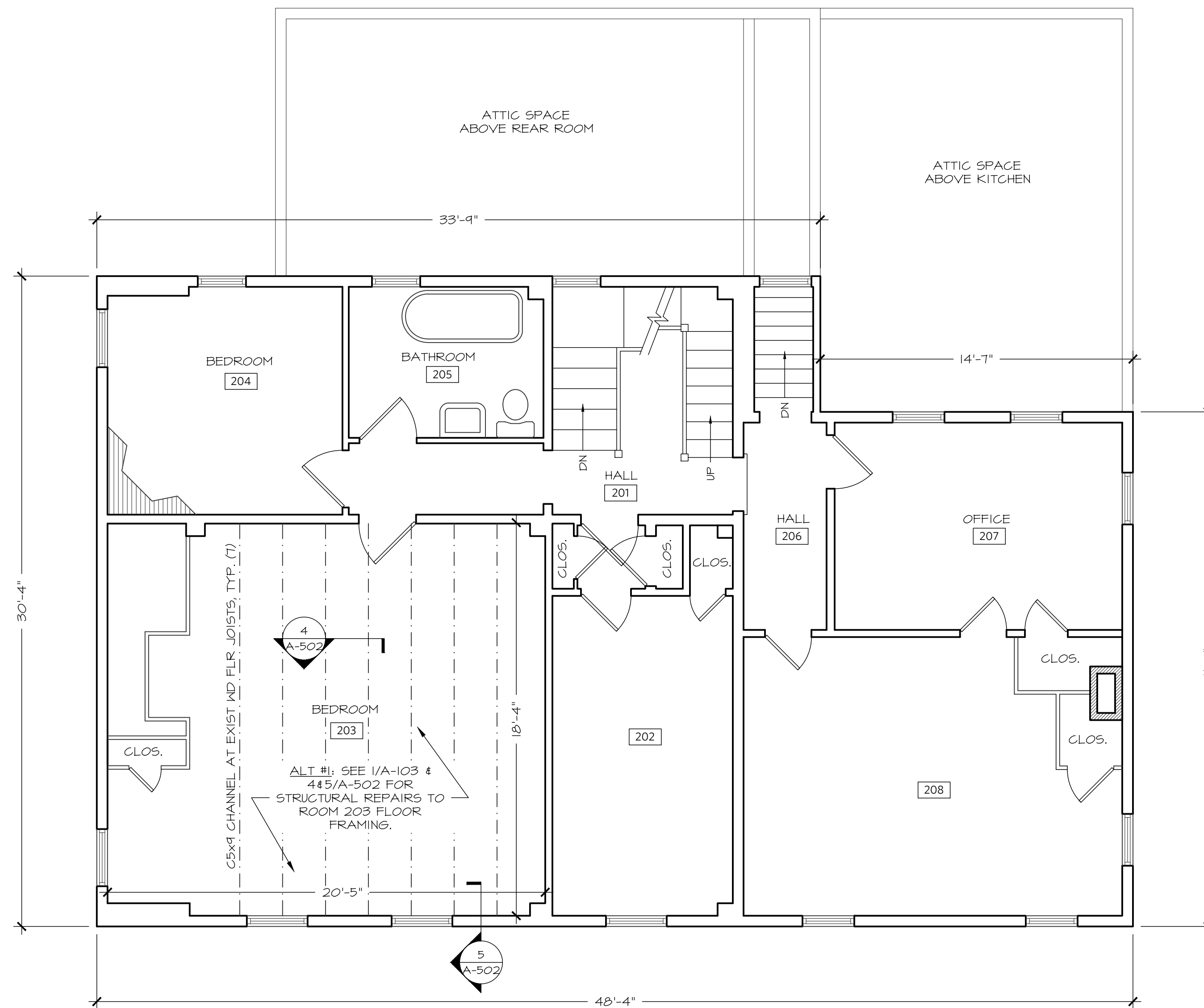
A-101

BASEMENT FTG & FNDN PLAN



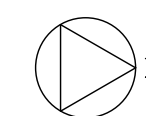
1 FIRST FLOOR PLAN
A-103

SCALE: 1/4" = 1'-0"



2 SECOND FLOOR PLAN
A-103

SCALE: 1/4" = 1'-0"



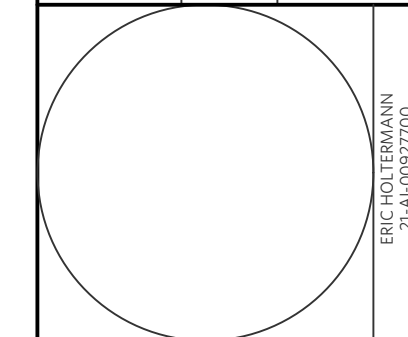
- ROOM 203 STRUCTURAL REPAIR NOTES -
1. REMOVE PLASTER AND LATH FROM CEILING OF ROOM 102 IN ORDER TO ACCESS FLOOR FRAMING.
 2. CONTRACTOR TO FIELD MEASURE ALL DIMENSIONS, POSITION C5 AS TIGHT AS POSSIBLE TO TOP OF EXISTING WOOD JOISTS. EXISTING WOOD JOISTS HAVE A PRONOUNCED SAG. ANGLE CONNECTIONS TO MAIN BEAMS ARE TO BE COMPLETED WITH THE APPROPRIATE ADJUSTMENT TO ALLOW BOLTS TO FIT.
 3. INSTALL STEEL JOIST REPAIRS PER DETAILS 445/A-502.
 4. DISCONNECT AND REMOVE ALL EXIST ELECTRICAL WIRING PRIOR TO INSTALLATION OF NEW STEEL. RE-ROUTE WIRING AS REQ'D FOR CONTINUED POWER.
 5. VERIFY EXIST GAS PIPE IS NOT ACTIVE. CUT AND CAP WHERE INDICATED ON PLAN AND REMOVE. INFORM ARCHITECT OF ANY PIPES NOT SHOWN ON PLAN.
 6. INSTALL STEEL REINFORCING AS INDICATED. CONTRACTOR SHALL EXERCISE CARE DURING INSTALLATION TO AVOID DAMAGE TO THE HISTORIC FLOORING ABOVE.
 7. INSTALL NEW TRADITIONAL 3-COAT PLASTER CEILING ON WOOD LATH. COORDINATE WITH NEW LIGHTING AND WIRING.

ISSUED FOR BID - AUGUST 1, 2022

NO.	REVISIONS	DATE

A-103

STRUCTURAL REPAIRS & ELECTRICAL UPGRADES TO THE
BURROWES MANSION
THE BOROUGH OF MATAWAN
94 MAIN STREET, MATAWAN, MONMOUTH COUNTY, NJ



HMR ARCHITECTS

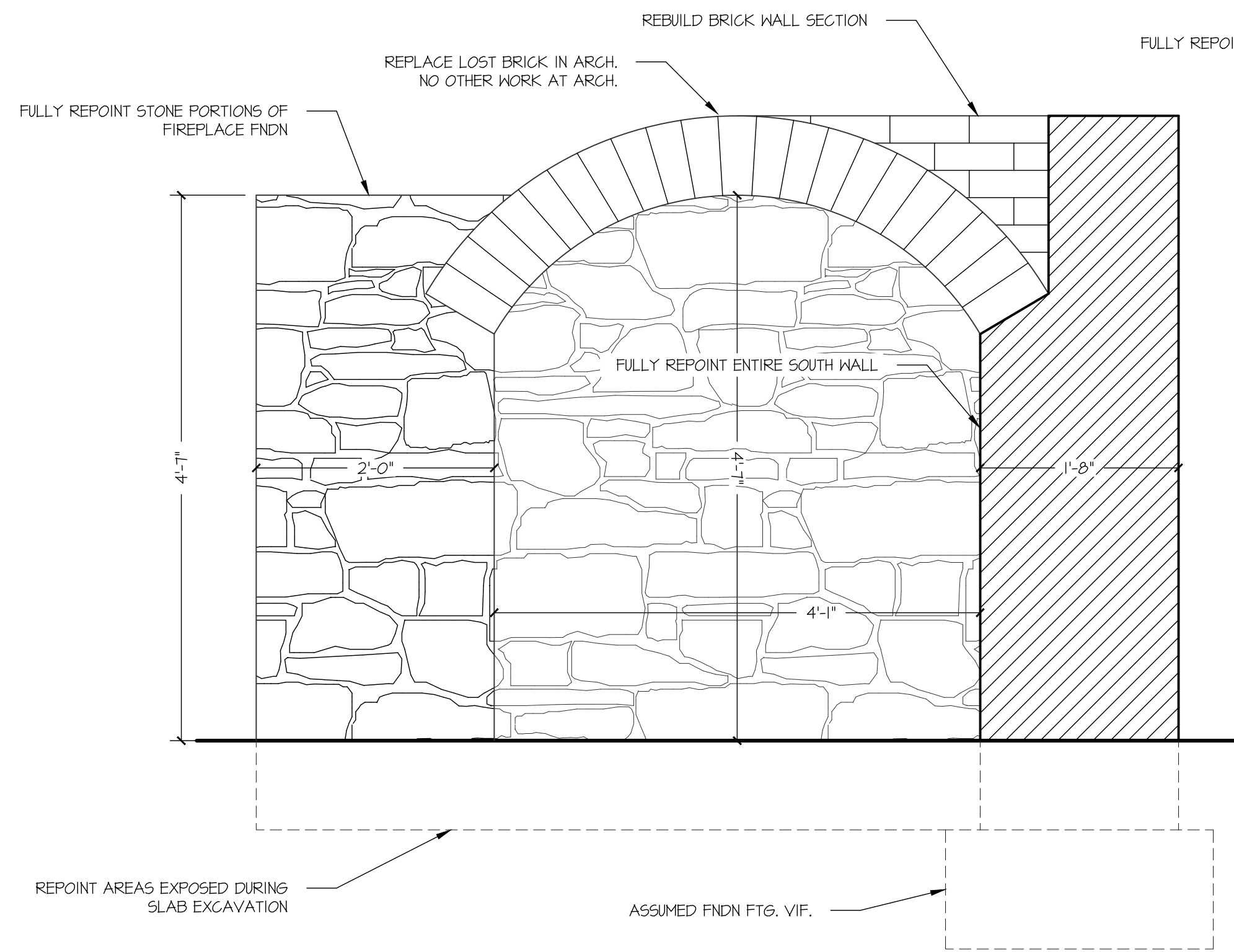
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KELTER & GILGILLO CONSULTING ENG. HARRIS ON - HARRIS ON, P.C.
100 WASHINGTON RD., PRINCETON, NJ 08540
609-799-8225 FAX: 609-213-3308 609-213-1808 FAX: 609-213-1809

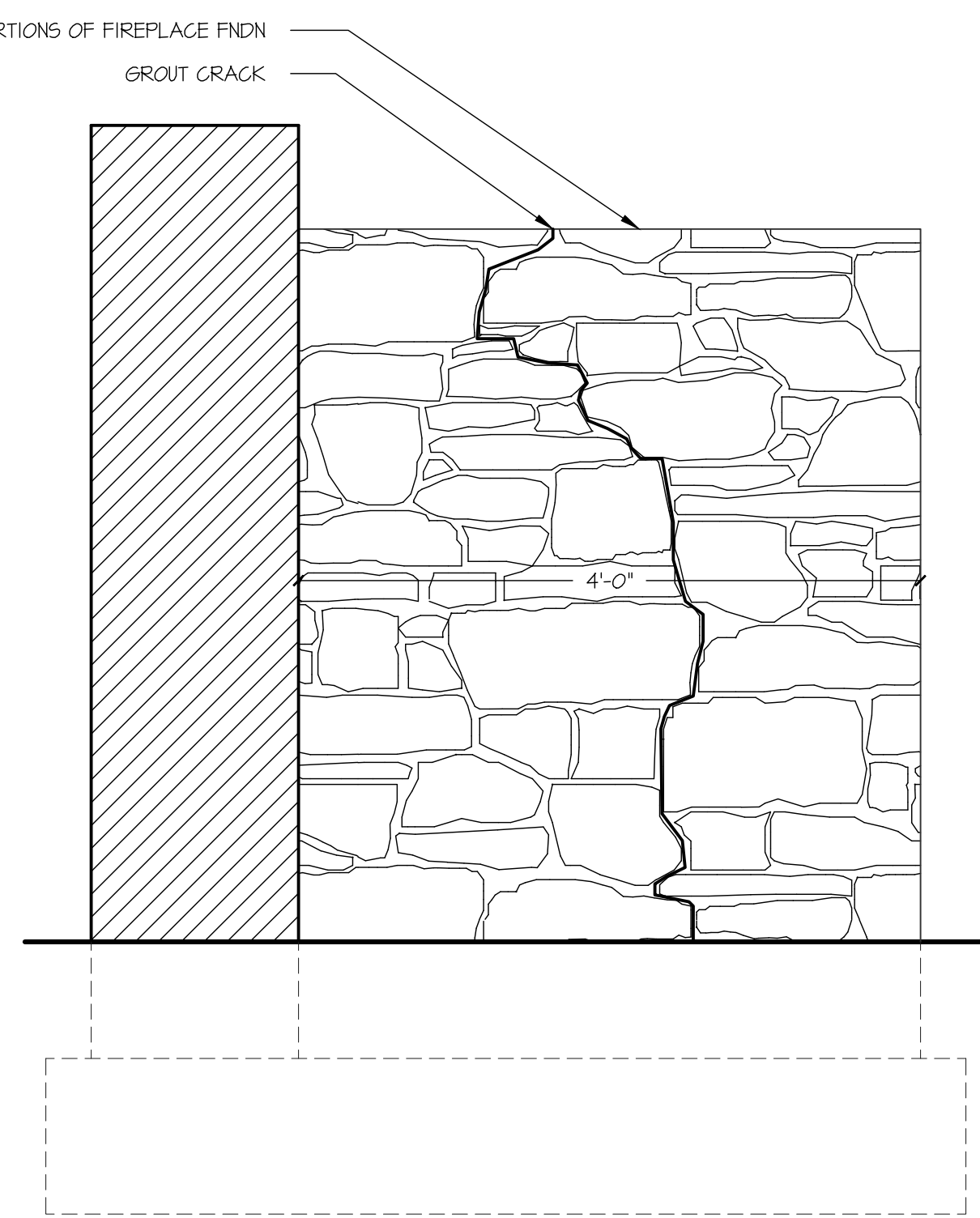
SCALE: 1/4" = 1'-0"
DRAWN BY: KLS/SL
DATE: 8/22

A-103

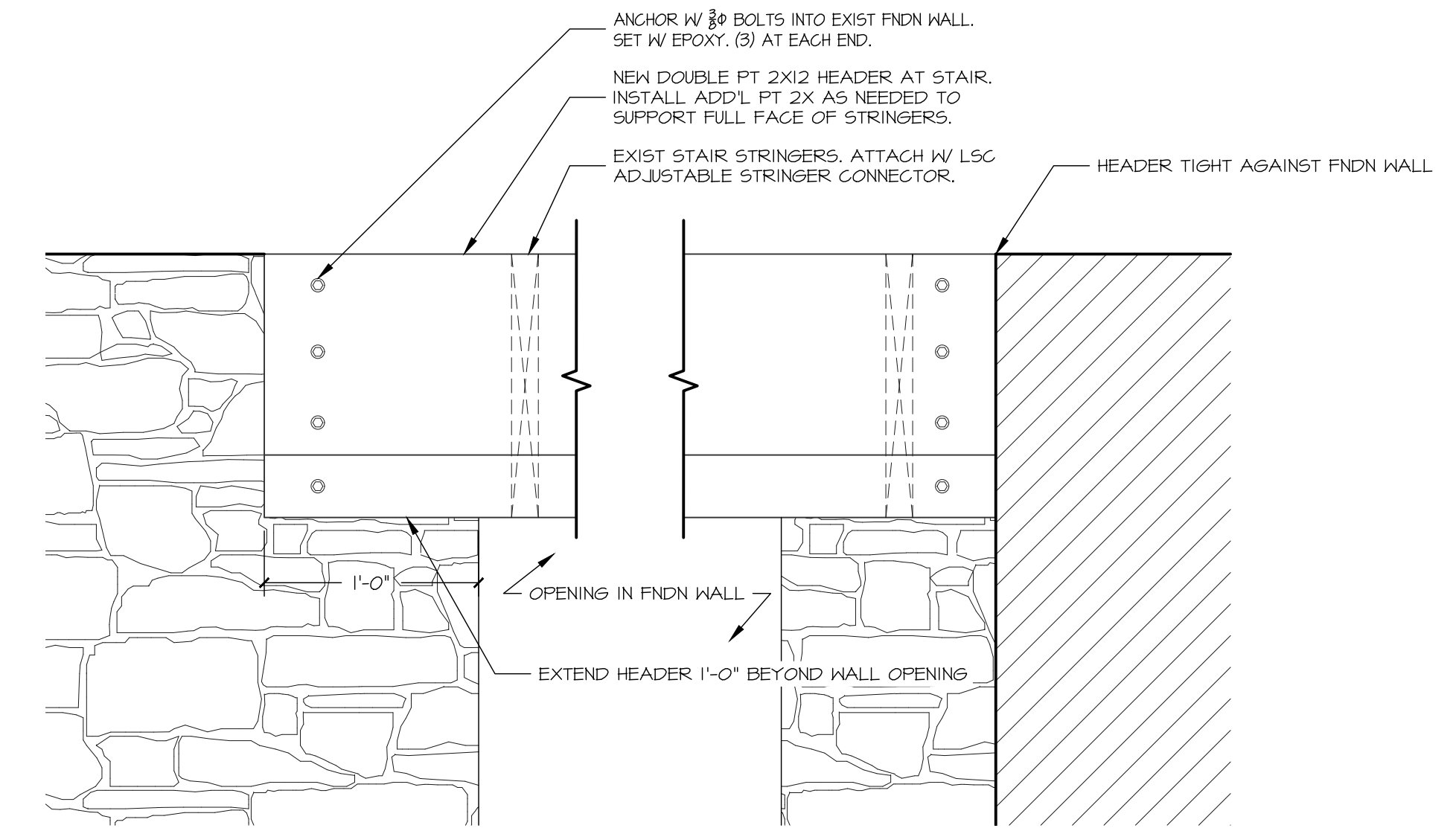
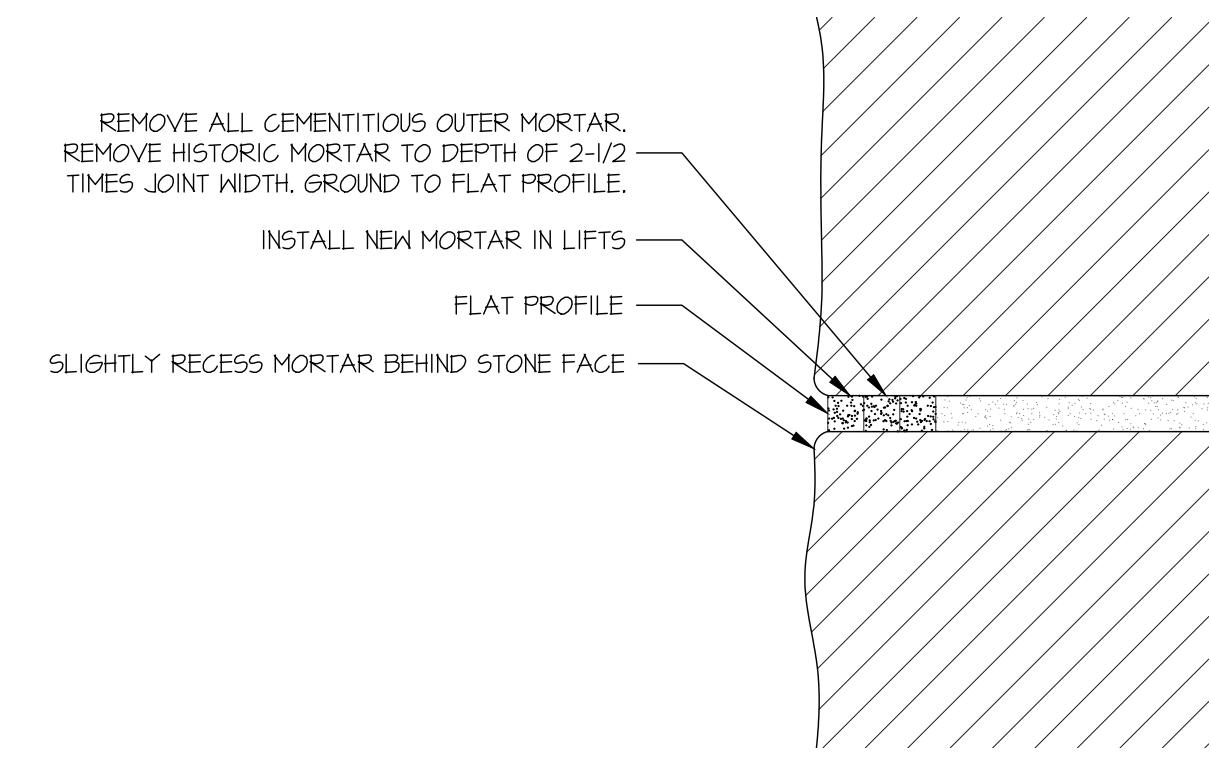
FLOOR PLANS



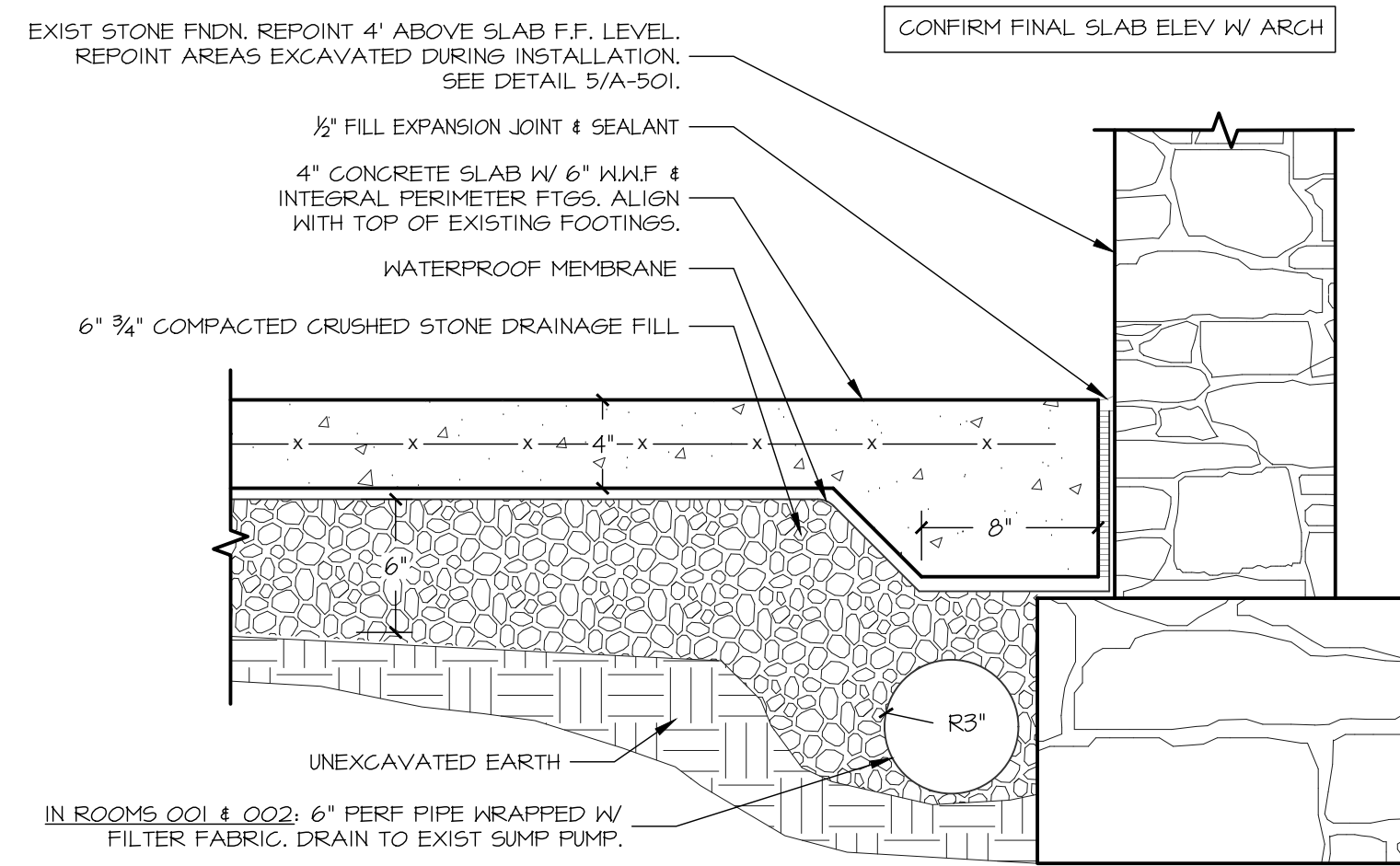
1 RM 001 FIREPLACE FNDN ELEVS
 A-501 SCALE: 1" = 1'-0"



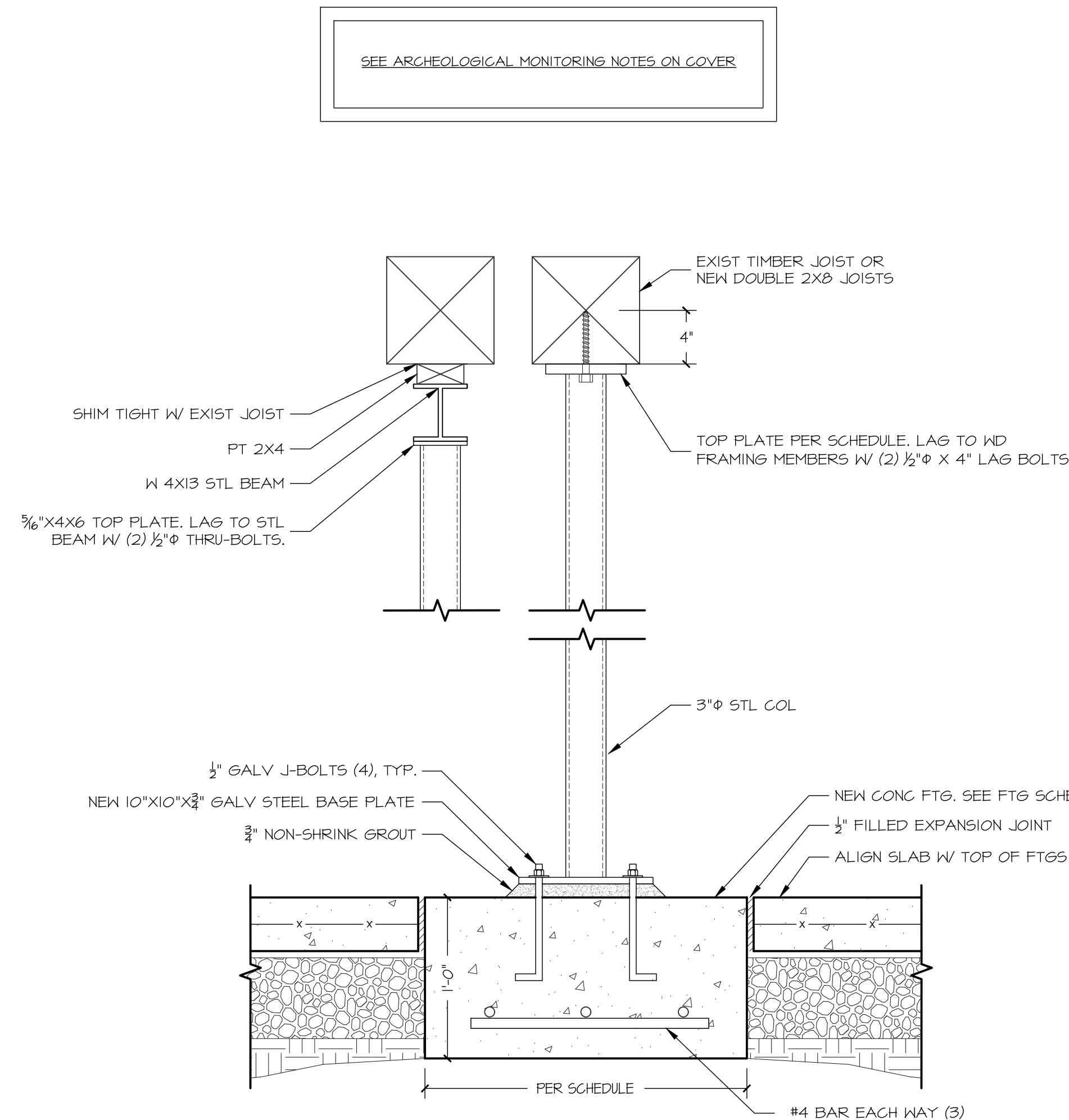
5 STONE FNDN REPOINTING DETAIL
 A-501 SCALE: 3" = 1'-0"



6 STAIRWAY HEADER DETAIL
 A-501 SCALE: 1 1/2" = 1'-0"

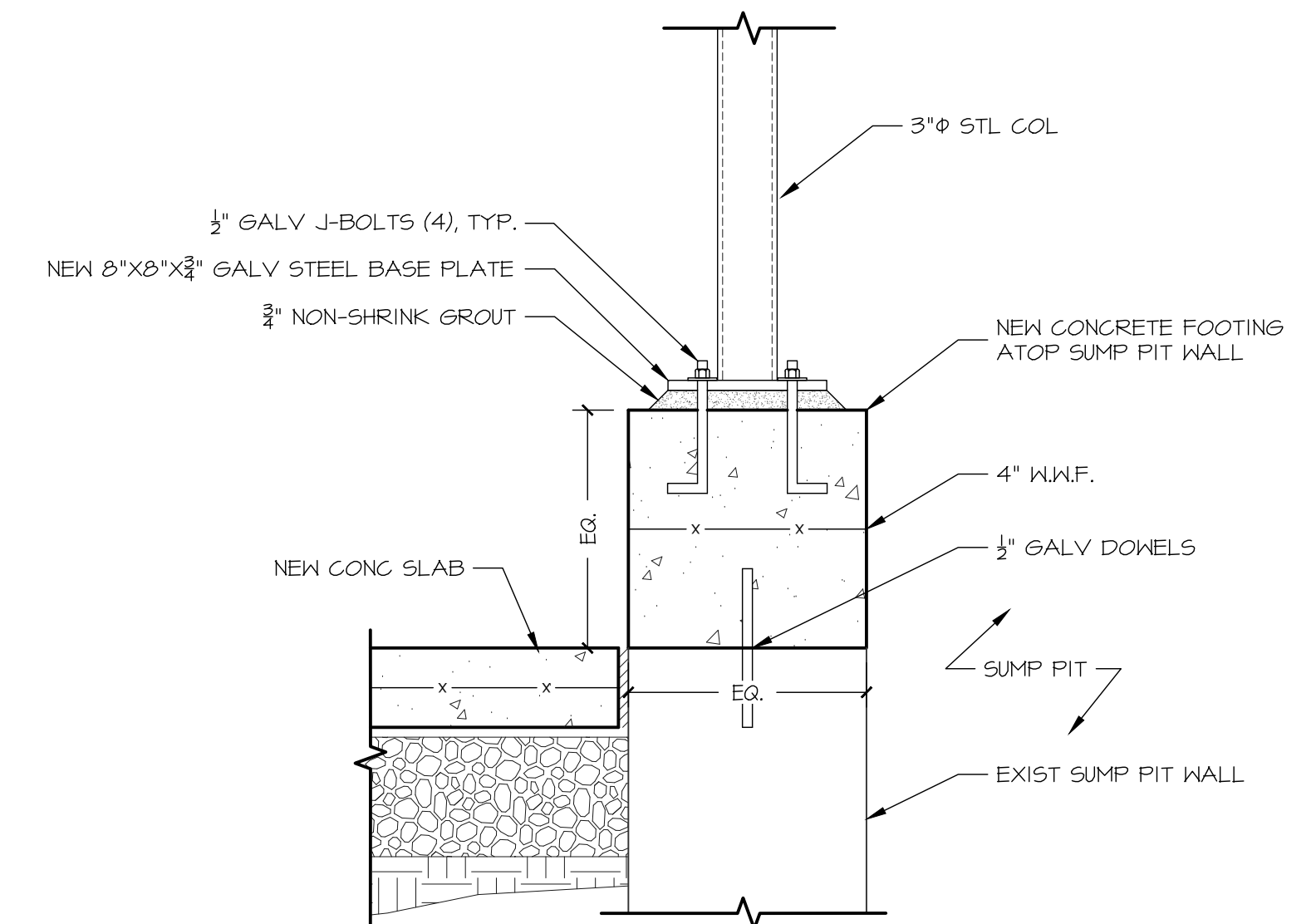


2 SLAB & PERIMETER DRAIN DETAIL
 A-501 W/ EXT STONE FTG SCALE: 1 1/2" = 1'-0"



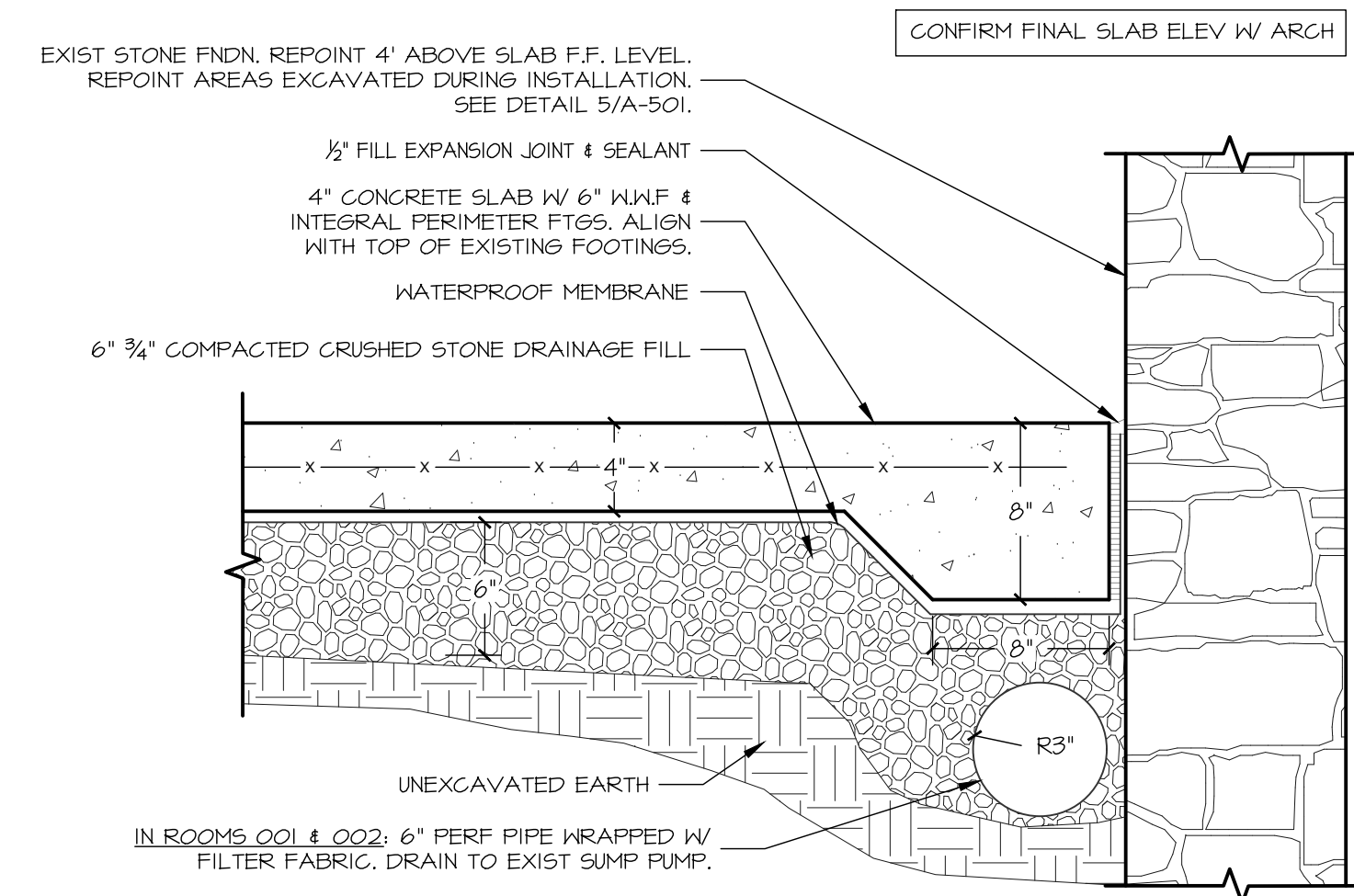
NOTES:
 1) G.C. TO FIELD VERIFY LOCATION & ELEVATIONS OF ALL EXISTING STRUCTURE & COORDINATE WITH THE STEEL CONTRACTOR PRIOR TO FABRICATION.
 2) G.C. TO CONFIRM FINAL ELEVATIONS OF NEW FTGS & SLAB W/ ARCHITECT.

4 FOOTING & COLUMN DETAIL
 A-501 SCALE: 1 1/2" = 1'-0"

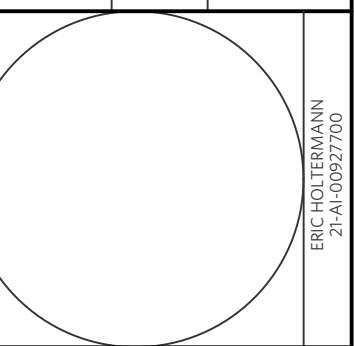


NOTES:
 1) G.C. TO FIELD VERIFY LOCATION & ELEVATIONS OF ALL EXISTING STRUCTURE & COORDINATE WITH THE STEEL CONTRACTOR PRIOR TO FABRICATION.
 2) G.C. TO CONFIRM FINAL ELEVATIONS OF NEW FTGS & SLAB W/ ARCHITECT.

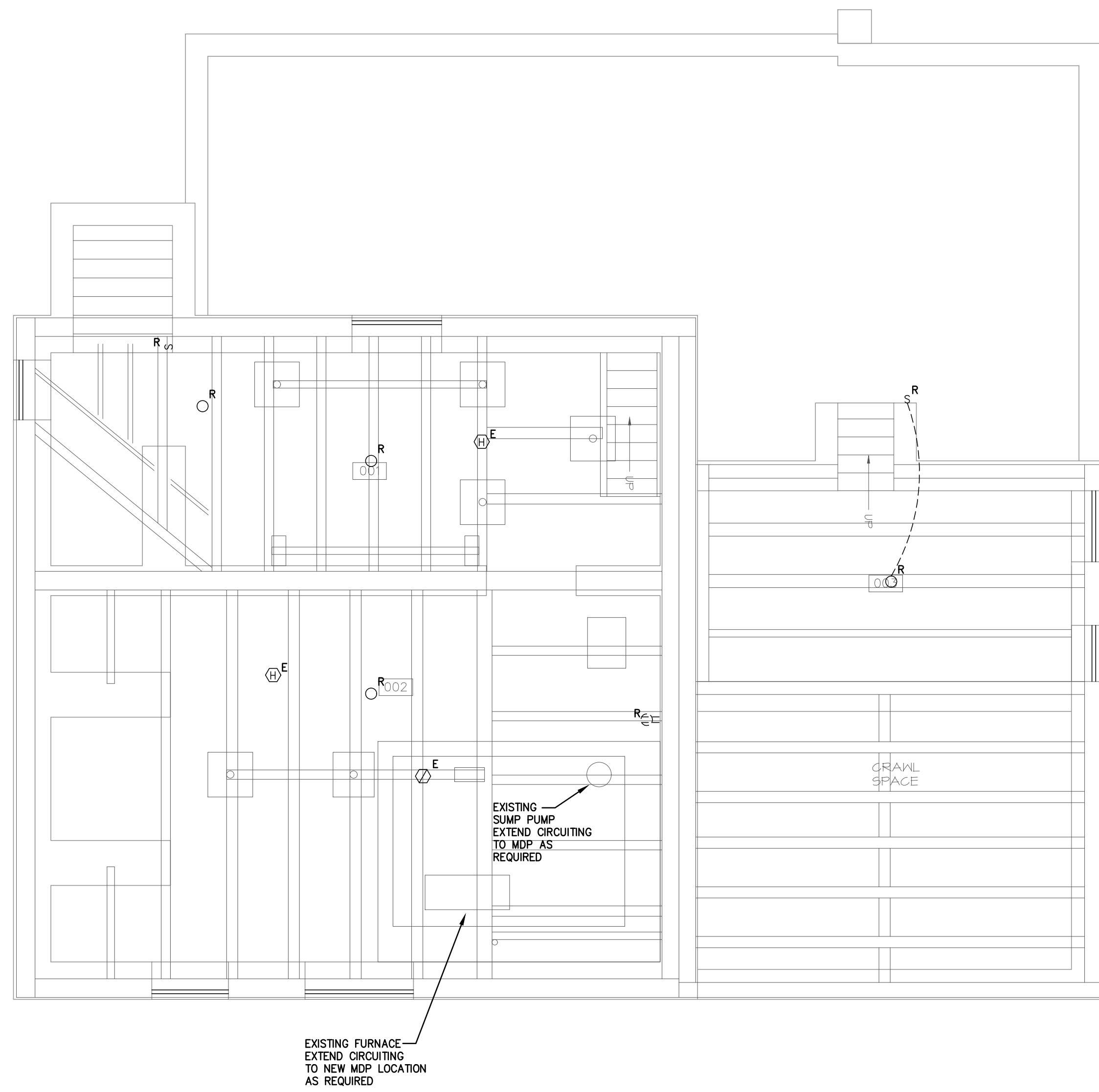
7 FOOTING & COLUMN DETAIL
 A-501 SCALE: 1 1/2" = 1'-0"



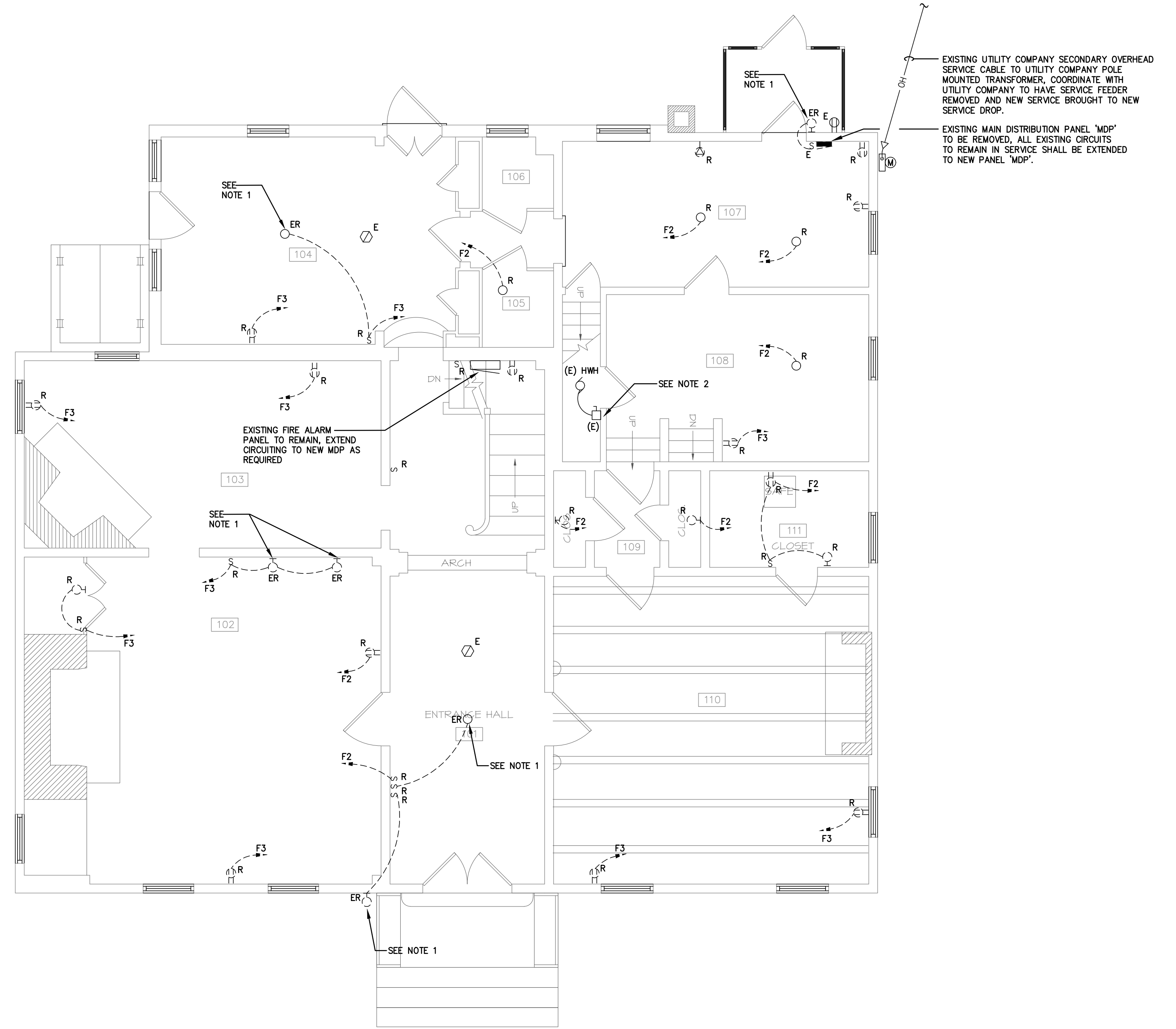
3 SLAB & PERIMETER DRAIN DETAIL
 A-501 W/O EXT STONE FTG SCALE: 1 1/2" = 1'-0"



NO.	REVISIONS	DATE



1 BASEMENT PLAN - ELECTRICAL DEMOLITION
E-1 SCALE 1/4" = 1'-0"



2 FIRST FLOOR PLAN - ELECTRICAL DEMOLITION
E-1 SCALE 1/4" = 1'-0"

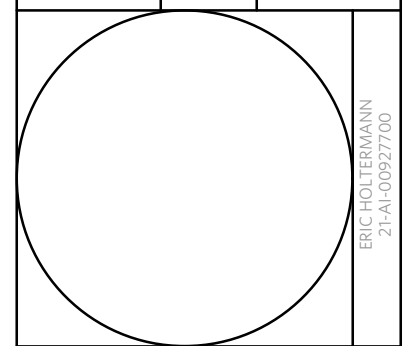
- NOTES:
1. REMOVE EXISTING FIXTURE, TEST ELECTRICAL COMPONENTS, REPLACE ANY BROKEN PARTS, CLEAN, RELAMP AND CAREFULLY STORE ON SITE FOR REINSTALLATION.
 2. EXISTING HOT WATER HEATER AND HOT WATER HEATER DISCONNECT MEANS TO REMAIN, EXTEND EXISTING CIRCUITING TO NEW MDP LOCATION AS REQUIRED.

SCALE: AS NOTED
 DRAWN BY: GG
 DATE: 8/1/22

821 ALEXANDER ROAD - SUITE 115
 PRINCETON, NEW JERSEY 08540
 609-452-1070 - HMR-ARCHITECTS.COM

HMR ARCHITECTS

DEMO PLANS - ELECTRICAL



STRUCTURAL REPAIRS & ELECTRICAL UPGRADES TO THE
BURROWES MANSION
 THE BOROUGH OF MATAWAN
 94 MAIN STREET, MATAWAN, MONMOUTH COUNTY, NJ

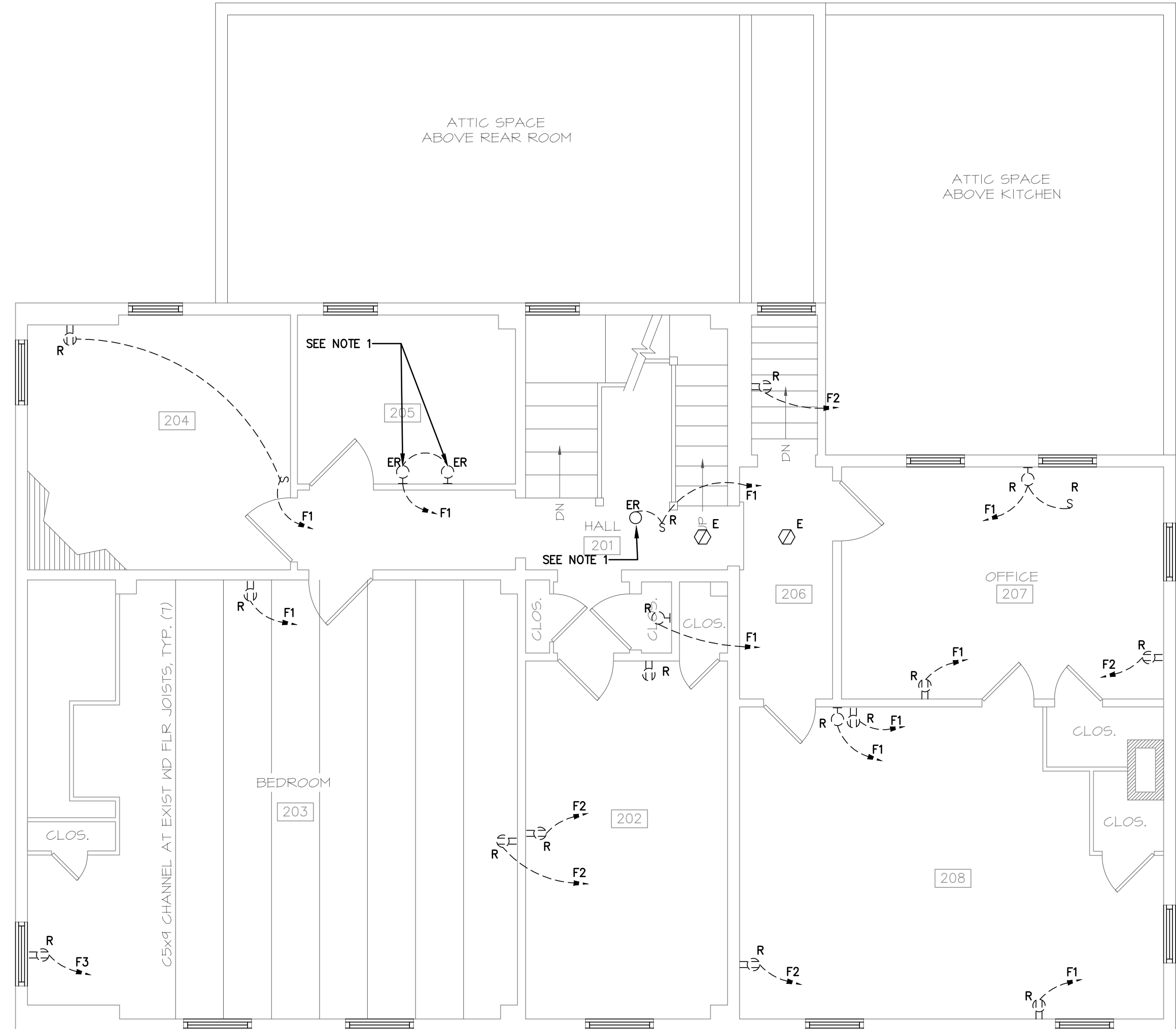
ISSUED FOR BID - AUGUST 1, 2022

E-1

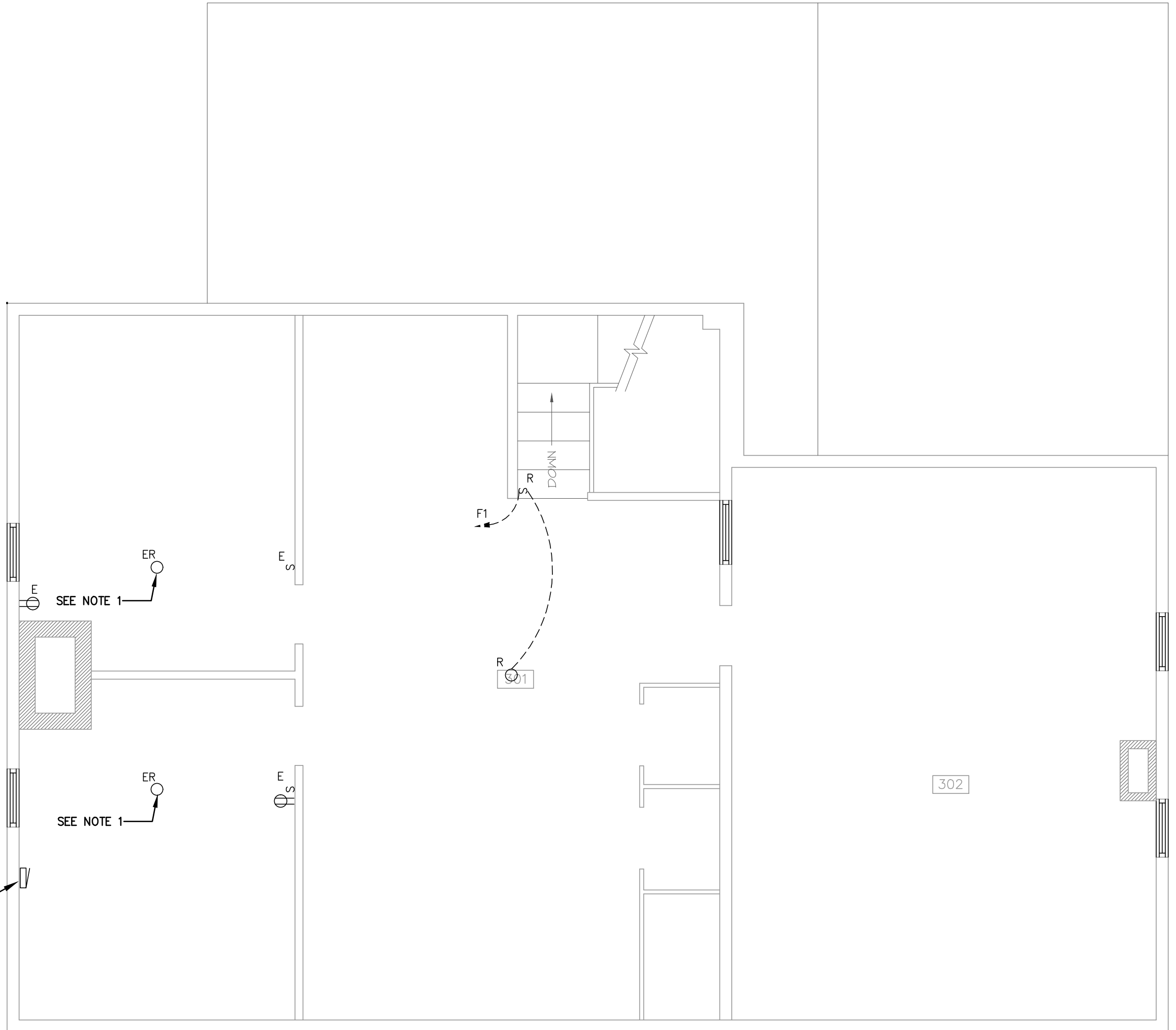
KELTER & GILLIGO
 consulting engineers
 P.O. BOX 777 148 PRINCETON-HIGHTSTOWN RD.
 PRINCETON JUNCTION NEW JERSEY 08550

Frank Tindoll, P.E.
 Professional Engineer
 N.J. 38656

July 27, 2022 8:06:44 p.m.
 Drawing: 27238 E-1.DWG



KEEP EXISTING FUSE
PANEL DISCONNECT
ALL WIRING



1
E-2 **SECOND FLOOR PLAN - ELECTRICAL DEMOLITION**
SCALE 1/4" = 1'-0"

- NOTES:**
1. REMOVE EXISTING FIXTURE, TEST ELECTRICAL COMPONENTS, REPLACE ANY BROKEN PARTS, CLEAN, RELAMP AND CAREFULLY STORE ON SITE FOR REINSTALLATION.

2
E-2 **ATTIC PLAN ELECTRICAL DEMOLITION**
SCALE 1/4" = 1'-0"

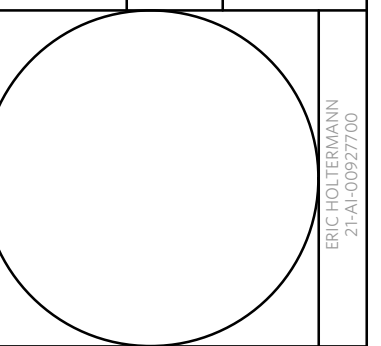
- NOTES:**
1. REMOVE EXISTING FIXTURE, TEST ELECTRICAL COMPONENTS, REPLACE ANY BROKEN PARTS, CLEAN, RELAMP AND CAREFULLY STORE ON SITE FOR REINSTALLATION.

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Frank Tindall, P.E.
Professional Engineer
NJ 38656

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STRUCTURAL REPAIRS & ELECTRICAL UPGRADES TO THE
BURROWES MANSION
THE BOROUGH OF MATAWAN
94 MAIN STREET, MATAWAN, MONMOUTH COUNTY, NJ



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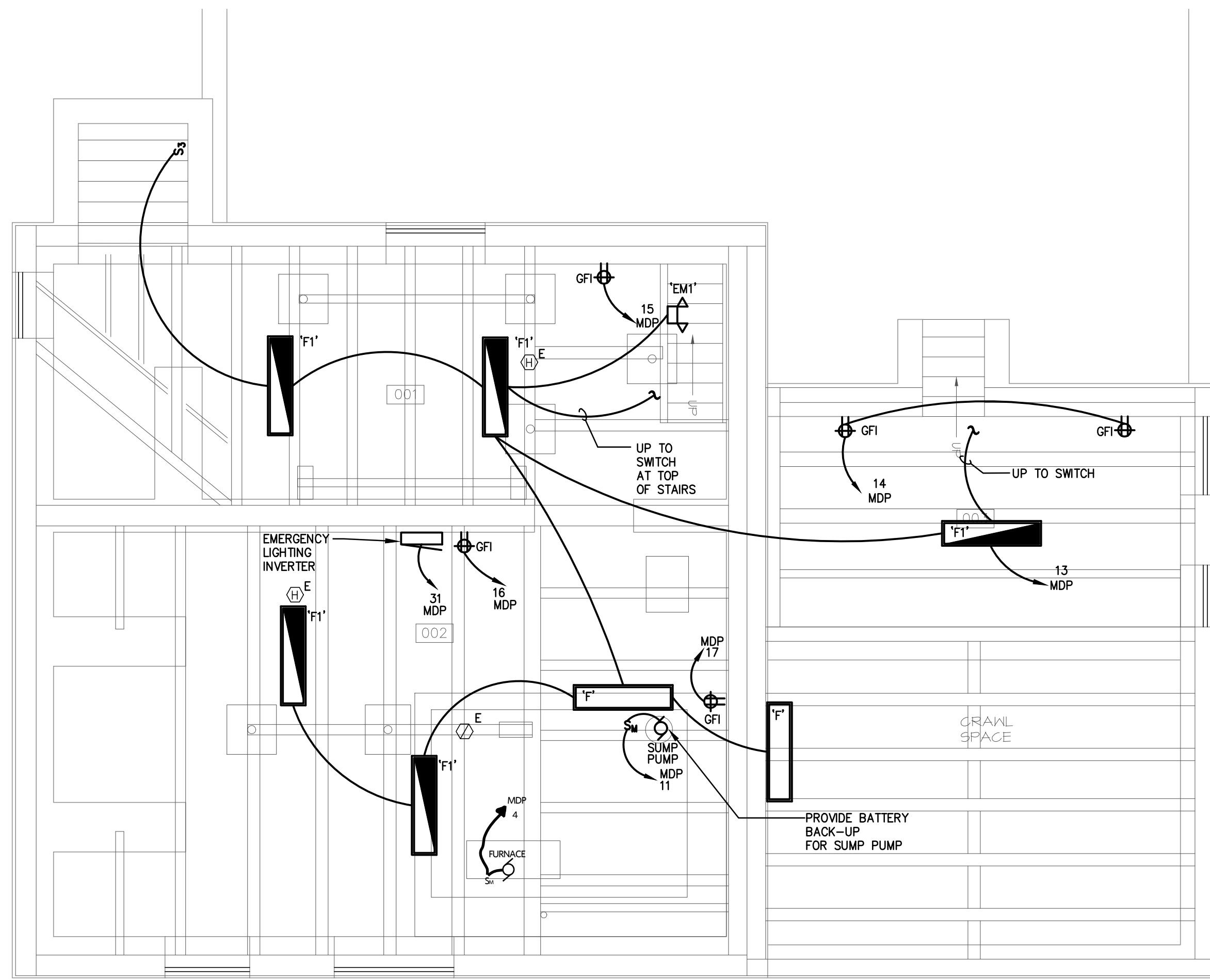
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SCALE: AS NOTED
DRAWN BY: GG
DATE: 8/1/22

DEMO PLANS - ELECTRICAL

E-2

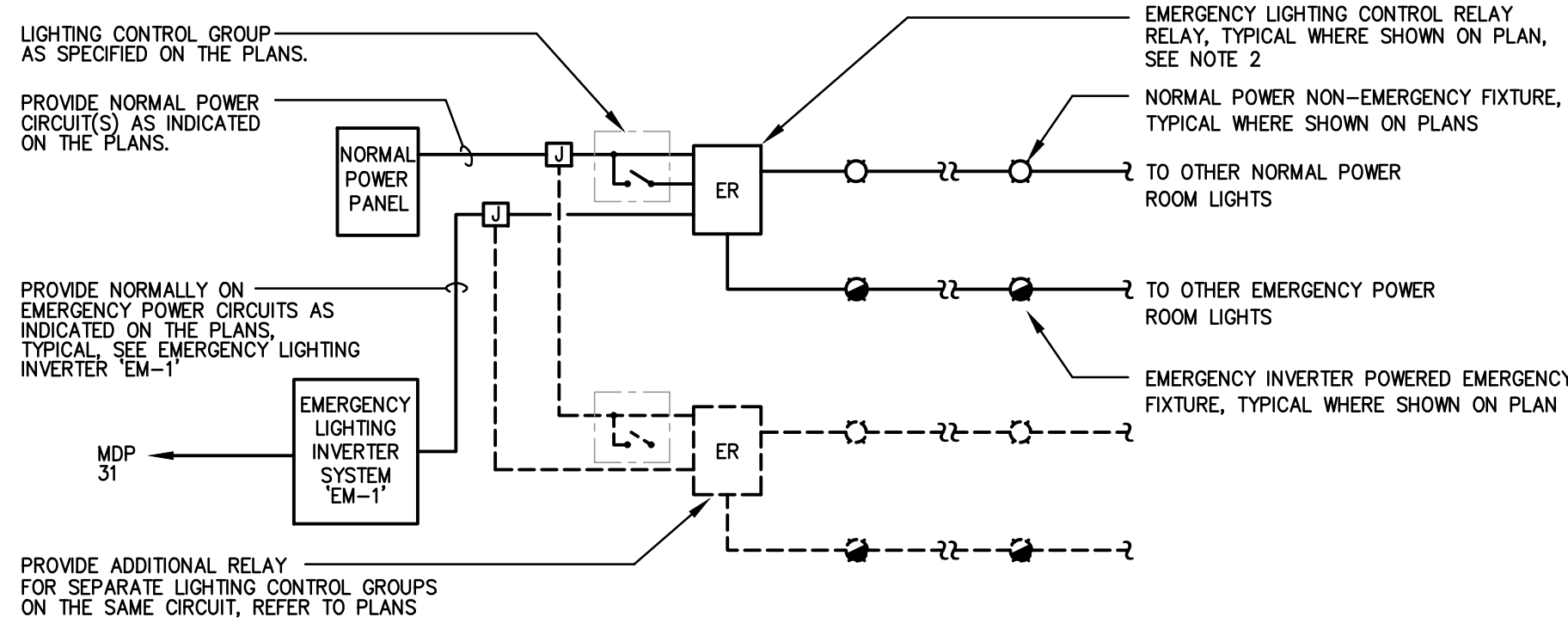
E-2



1
E-3 **BASEMENT PLAN - ELECTRICAL NEW WORK**
SCALE 1/4" = 1'-0"

NOTES:

1. ALL DEVICES, WIRE AND CONDUIT SHALL BE CONCEALED WITHIN NEW OR EXISTING WALLS WITH THE EXCEPTION OF EQUIPMENT SHOWN ON EXISTING MASONRY WALLS. PROVIDE ALL CUTTING AND PATCHING OF EXISTING WALLS AS REQUIRED TO MATCH EXISTING CONDITIONS. WHERE WIRING CANNOT BE CONCEALED PROVIDE SURFACE MOUNTED STEEL RACEWAY, WIREMOLD 2400 SERIES OF APPROVED EQUAL. PROVIDE ALL DEVICE BOXES, PLATES, TRIM PIECES, ELBOWS, HARDWARE, ETC., AS RECOMMENDED BY MANUFACTURER FOR A COMPLETE SYSTEM.

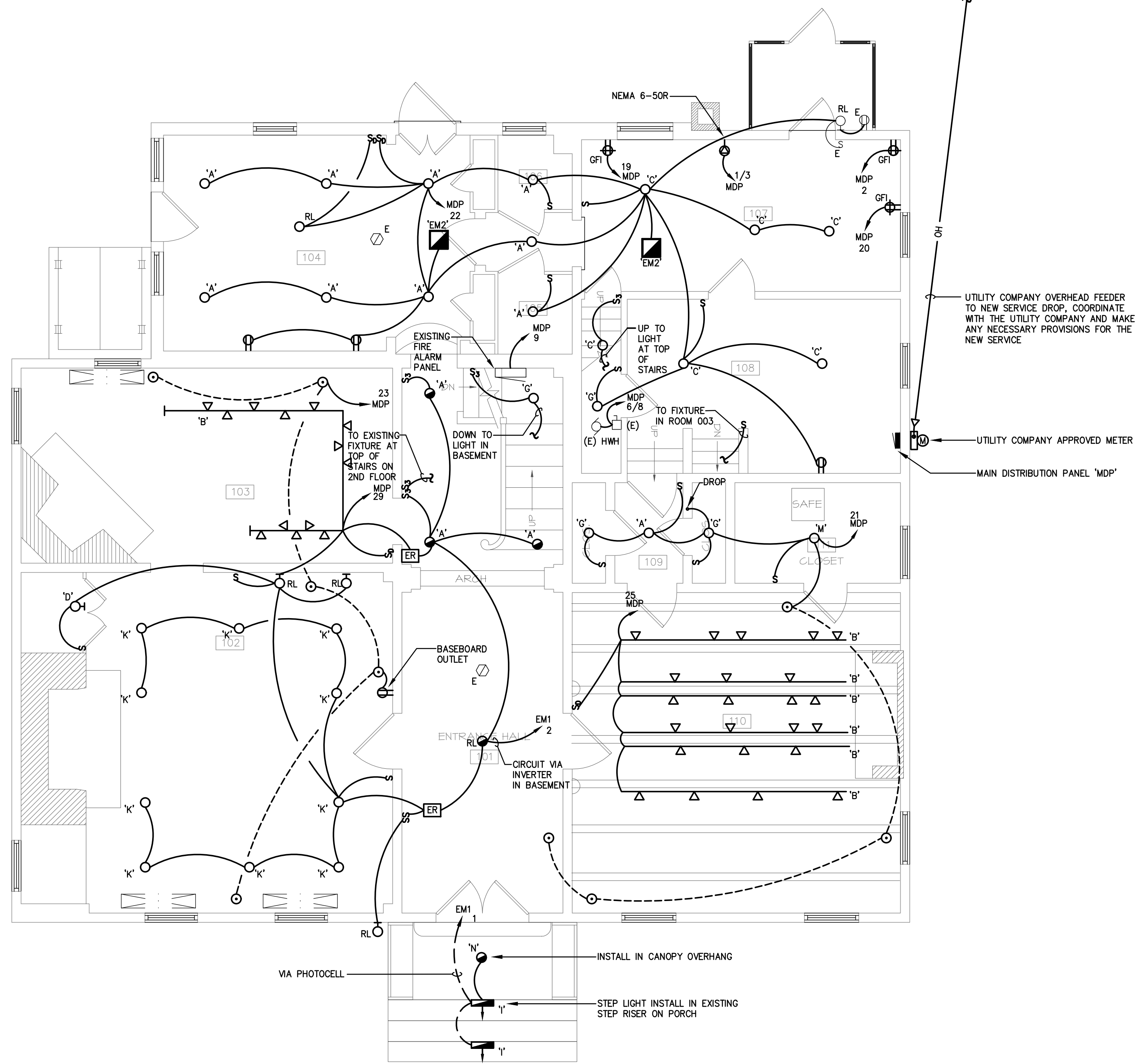


3
E-3 **EMERGENCY LIGHTING INVERTER WIRING DIAGRAM**
SCHEMATIC

NOTE:

1. EMERGENCY LIGHTING INVERTER, MYERS MODEL NO. 1-EM-3-S-BA2006-2YW OR APPROVED EQUAL. PROVIDE WITH OPTIONAL FLOOR MOUNTS.
2. PROVIDE A MYERS EMERGENCY LIGHTING CONTROL RELAY WHERE SHOWN ON PLAN. FOR NORMAL SWITCHING APPLICATIONS PROVIDE A MODEL NO. RLY-SW-2. FOR LINE VOLTAGE DIMMER APPLICATIONS PROVIDE A MODEL NO. RLY-DIM-D. FOR 0-10V DIMMER APPLICATIONS PROVIDE A MODEL NO. RLY-DIM-2D. COORDINATE EXACT LOCATION OF ALL RELAYS IN THE FIELD WITH ARCHITECT. PROVIDE ALL WIRING PER MANUFACTURER'S WRITTEN SPECIFICATIONS.

EMERGENCY LIGHTING INVERTER 'EM1'					
120V, 1ø, 3W, S/N WITH (3) 20A OUTPUT CIRCUIT BREAKERS, RATE TO SUPPLY 1.0 KW FOR 90 MINUTES					
CKT. NO.	NORMALLY ON OUTPUT BREAKER		LOAD		WIRE & CONDUIT
	AMPS	POLES	KVA	HP	
1	20	1	0.03	-	LIGHTING - EXTERIOR FRONT 2 #12 & 1 #12 GRD - 3/4"C
2	20	1	0.23	-	LIGHTING - FRONT ENTRANCE 2 #12 & 1 #12 GRD - 3/4"C
3	20	1	0.06	-	LIGHTING - SECOND FLOOR CORR. 2 #12 & 1 #12 GRD - 3/4"C
			0.32	TOTAL CONNECTED LOAD	



2
E-3 **FIRST FLOOR PLAN - ELECTRICAL**
SCALE 1/4" = 1'-0"

NOTES:

1. ALL DEVICES, WIRE AND CONDUIT SHALL BE CONCEALED WITHIN NEW OR EXISTING WALLS WITH THE EXCEPTION OF EQUIPMENT SHOWN ON EXISTING MASONRY WALLS. PROVIDE ALL CUTTING AND PATCHING OF EXISTING WALLS AS REQUIRED TO MATCH EXISTING CONDITIONS. WHERE WIRING CANNOT BE CONCEALED PROVIDE SURFACE MOUNTED STEEL RACEWAY, WIREMOLD 2400 SERIES OF APPROVED EQUAL. PROVIDE ALL DEVICE BOXES, PLATES, TRIM PIECES, ELBOWS, HARDWARE, ETC., AS RECOMMENDED BY MANUFACTURER FOR A COMPLETE SYSTEM.

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PRINCETON JUNCTION NEW JERSEY 08550
Frank Tindall, P.E.
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STRUCTURAL REPAIRS & ELECTRICAL UPGRADES TO THE
BURROWES MANSION
THE BOROUGH OF MATAWAN
94 MAIN STREET, MATAWAN, MONMOUTH COUNTY, NJ

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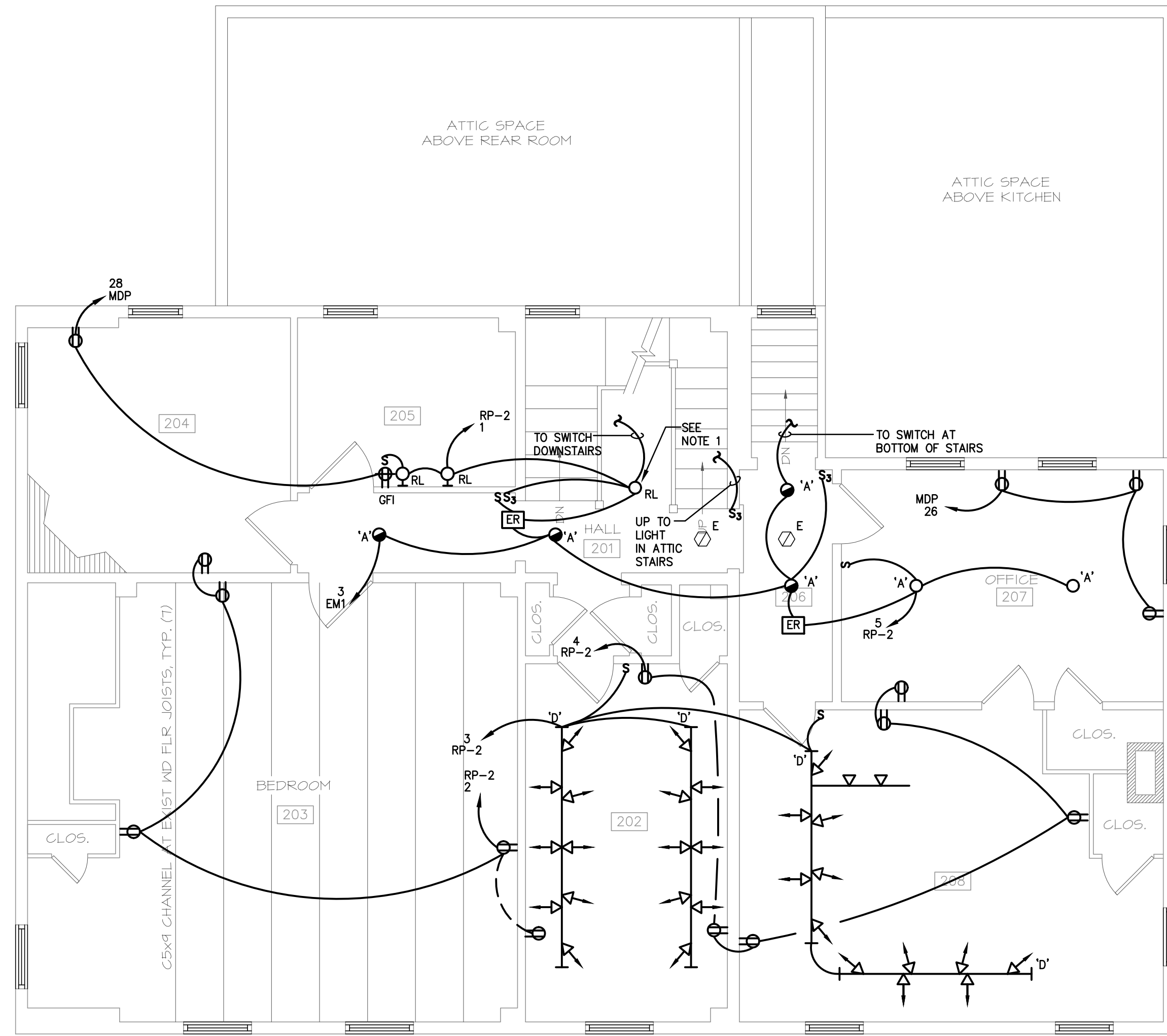
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SCALE: AS NOTED
DRAWN BY: GG
DATE: 8/1/22

FLOOR PLANS - ELECTRICAL

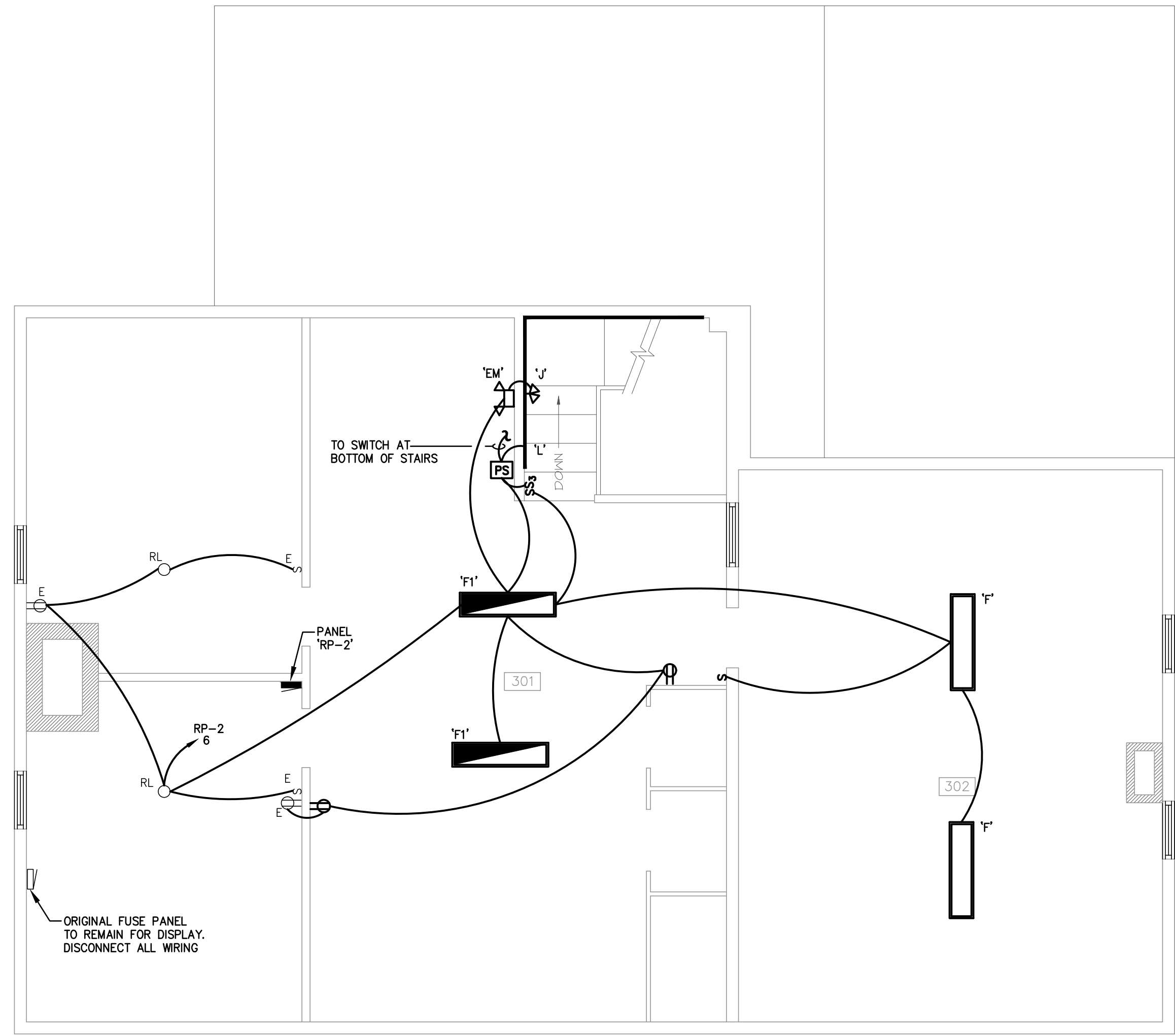
E-3

E-3



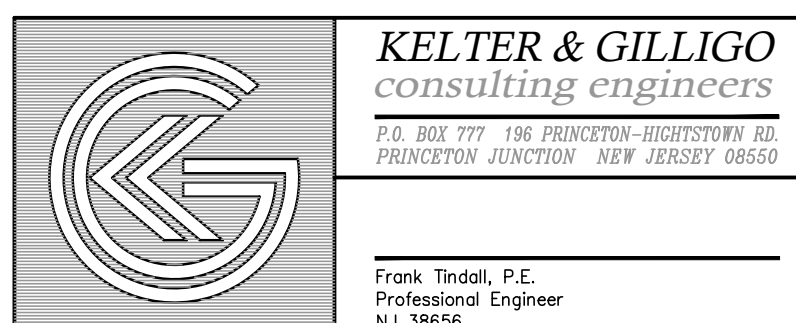
1 SECOND FLOOR PLAN - ELECTRICAL
E-4 SCALE 1/4" = 1'-0"

NOTE:
1. ALL DEVICES, WIRE AND CONDUIT SHALL BE CONCEALED WITHIN NEW OR EXISTING WALLS WITH THE EXCEPTION OF EQUIPMENT SHOWN ON EXISTING MASONRY WALLS. PROVIDE ALL CUTTING AND PATCHING OF EXISTING WALLS AS REQUIRED TO MATCH EXISTING CONDITIONS. WHERE WIRING CANNOT BE CONCEALED PROVIDE SURFACE MOUNTED STEEL RACEWAY, WIREMOLD 2400 SERIES OF APPROVED EQUAL. PROVIDE ALL DEVICE BOXES, PLATES, TRIM PIECES, ELBOWS, HARDWARE, ETC., AS RECOMMENDED BY MANUFACTURER FOR A COMPLETE SYSTEM.



2 ATTIC PLAN - ELECTRICAL
E-4 SCALE 1/4" = 1'-0"

NOTE:
1. ALL DEVICES, WIRE AND CONDUIT SHALL BE CONCEALED WITHIN NEW OR EXISTING WALLS WITH THE EXCEPTION OF EQUIPMENT SHOWN ON EXISTING MASONRY WALLS. PROVIDE ALL CUTTING AND PATCHING OF EXISTING WALLS AS REQUIRED TO MATCH EXISTING CONDITIONS. WHERE WIRING CANNOT BE CONCEALED PROVIDE SURFACE MOUNTED STEEL RACEWAY, WIREMOLD 2400 SERIES OF APPROVED EQUAL. PROVIDE ALL DEVICE BOXES, PLATES, TRIM PIECES, ELBOWS, HARDWARE, ETC., AS RECOMMENDED BY MANUFACTURER FOR A COMPLETE SYSTEM.

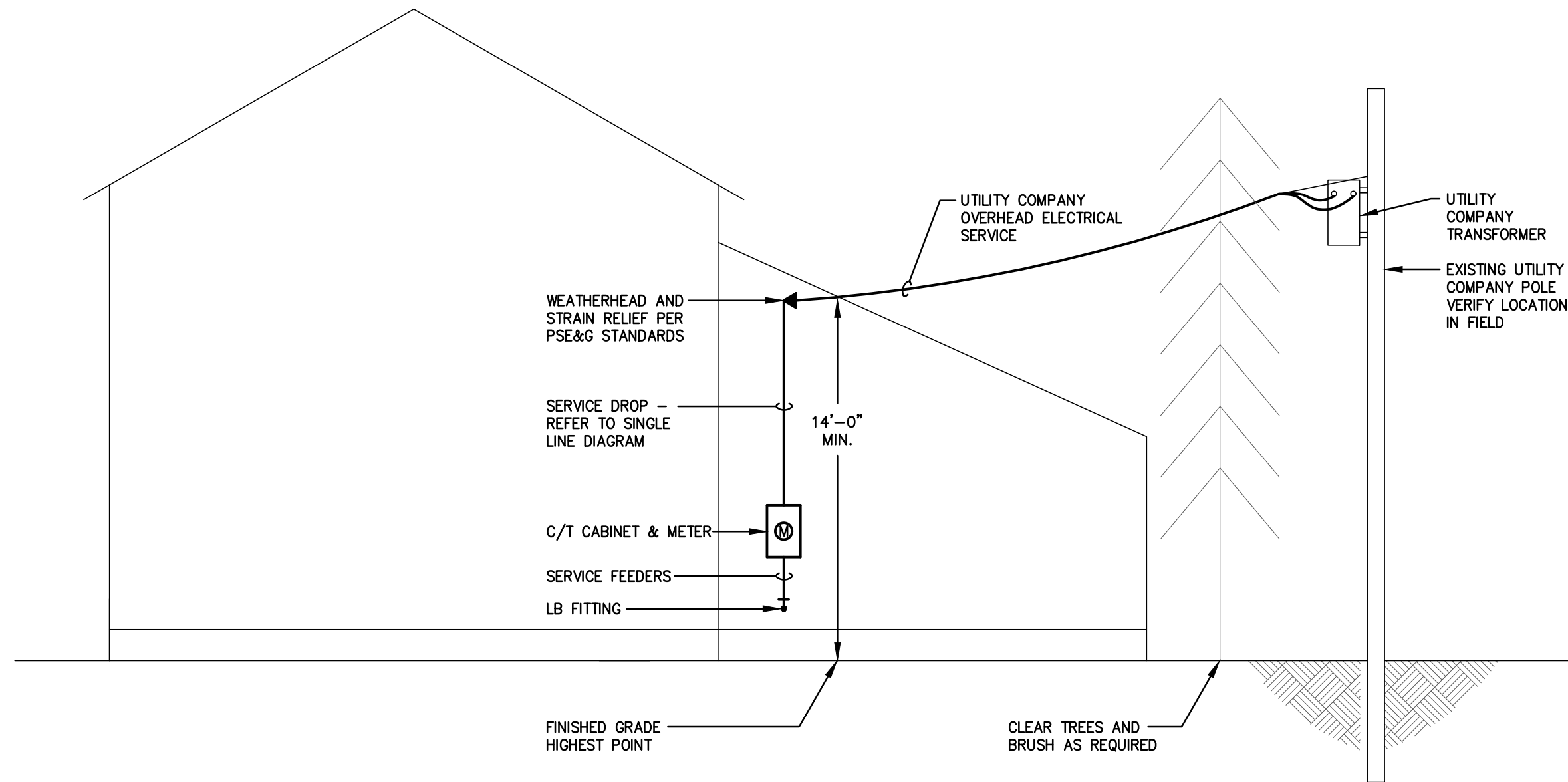


ISSUED FOR BID - AUGUST 1, 2022

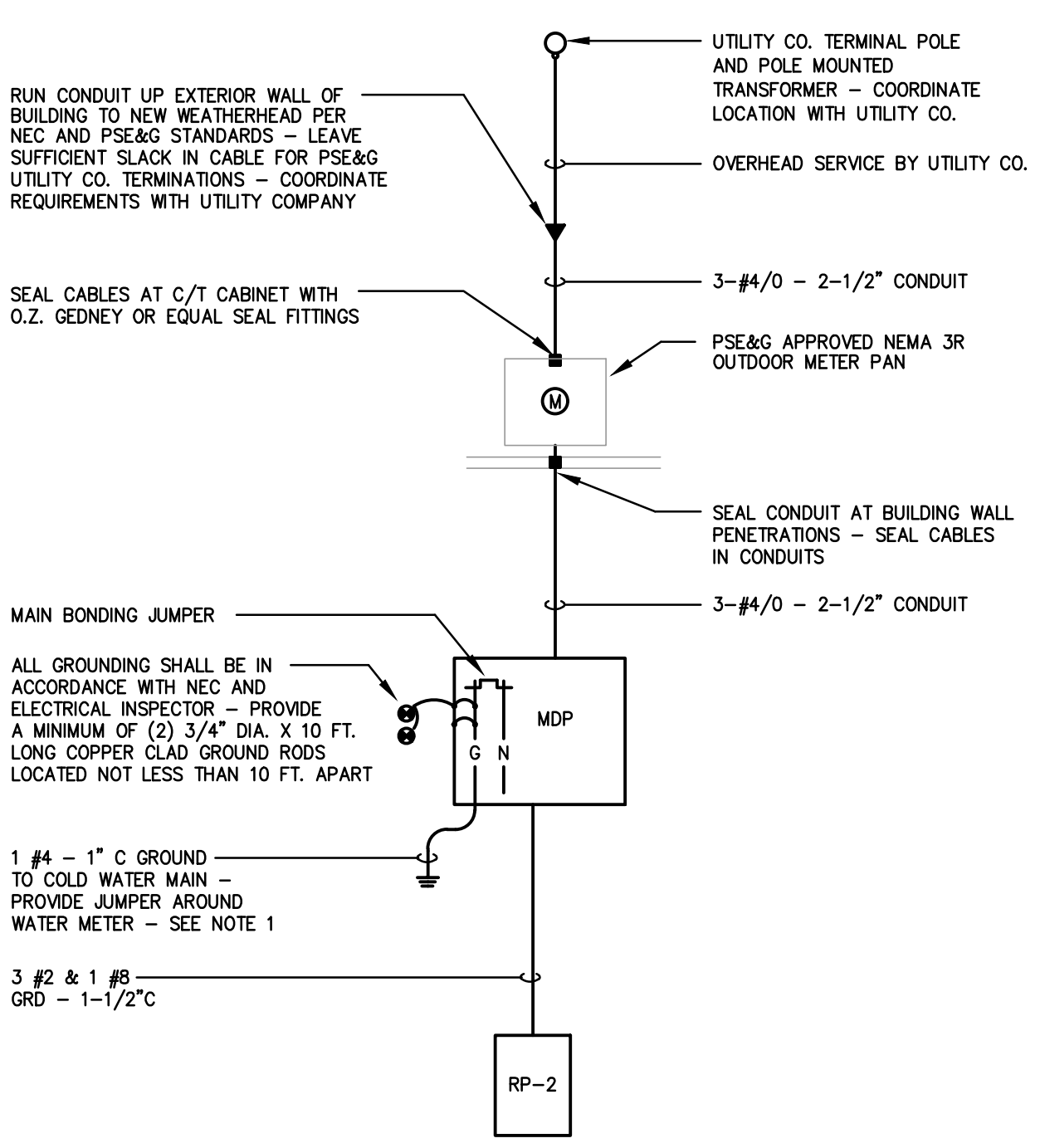
STRUCTURAL REPAIRS & ELECTRICAL UPGRADES TO THE
BURROWES MANSION
THE BOROUGH OF MATAWAN
94 MAIN STREET, MATAWAN, MONMOUTH COUNTY, NJ

HMRARCHITECTS
821 ALEXANDER ROAD - SUITE 115
PRINCETON, NEW JERSEY 08540
609-452-1070 - HMR-ARCHITECTS.COM
DATE: 8/1/22
E-4

E-4

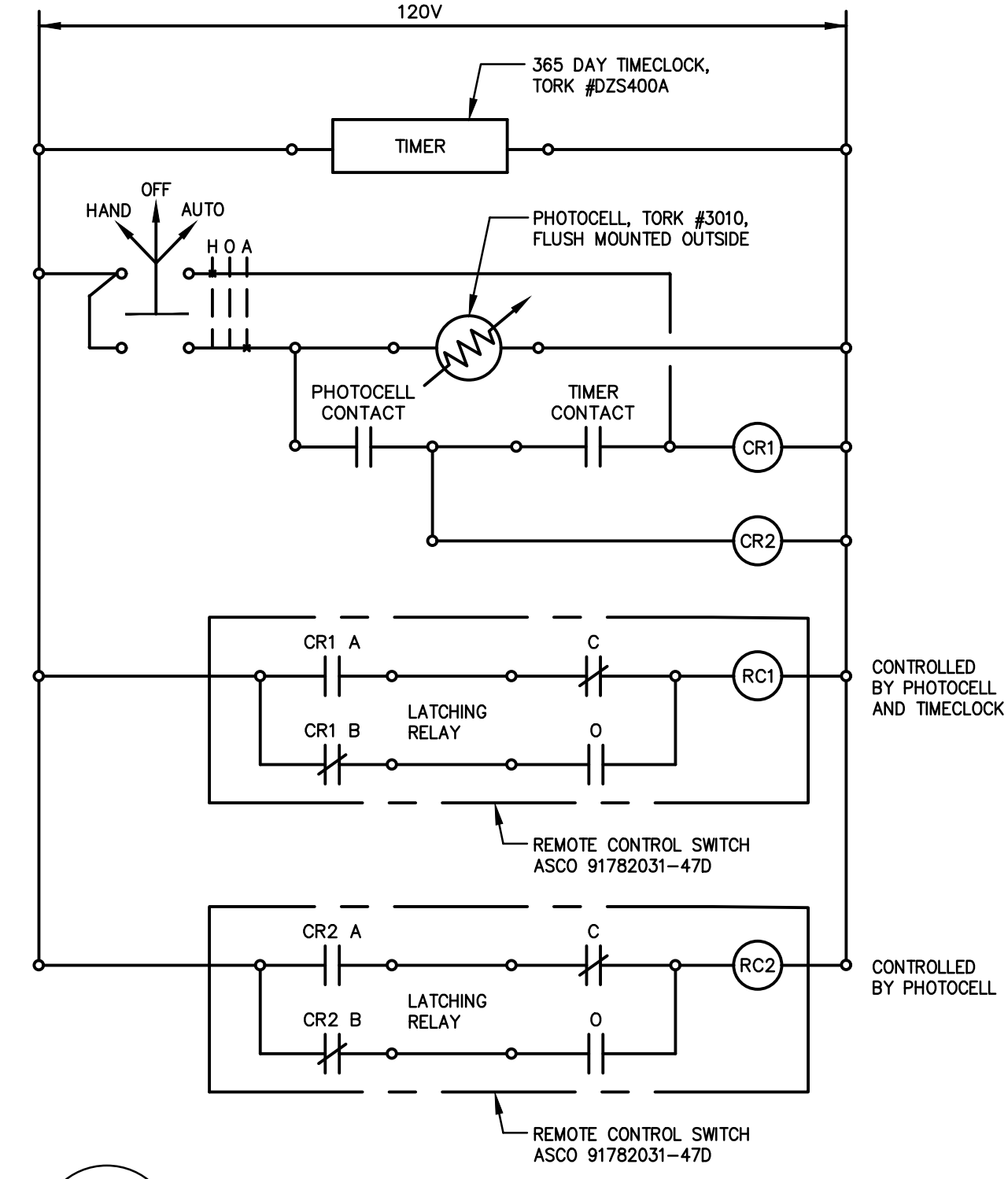


1 ELECTRICAL SERVICE DETAIL
E-5 NOT TO SCALE



NOTES:
1. WHERE THERE IS 20' OR MORE OF 1/2" OR LARGER REBAR ENCASED IN A MINIMUM OF 2" OF CONCRETE, IT SHALL BE BONDED TOGETHER WITH STEEL WIRE TIES AND TO THE GROUNDING ELECTRODE SYSTEM WITH #4 AWG SOLID COPPER CONDUCTOR AND AN APPROVED GROUNDING CLAMP, BUNDLY TYPE "GAR" SERIES OR EQUAL, PER NEC 250-50(C), 250-52(A)(3), 250-66(B), AND 250-70.

2 SINGLE LINE DIAGRAM
E-5 SCHEMATIC



3 SCHEMATIC WIRING DIAGRAM FOR EXTERIOR LIGHTING CONTROL
E-5 SCHEMATIC

NOTES:
1. MOUNT CONTROL SWITCH RELAY & REMOTE CONTROL SWITCH IN NEMA 1 ENCLOSURE AND MOUNT HAND-OFF-AUTO SELECTOR SWITCH ON THE FACE OF ENCLOSURE. COORDINATE EXACT LOCATION IN FIELD.
2. ALL EXTERIOR EMERGENCY FIXTURES SHALL BE CONTROLLED BY PHOTOCELL ONLY.

ID	LAMPS	MANUF.	CAT. NO.	MOUNTING	DESCRIPTION
A	15W LED SPX 35	INTERLUX	WG-100RPTD-RPT-M-935-DO10-FROD-LAM-X	RECESSED	4" DIAMETER DOWNLIGHT, 0-10V DIMMING DRIVER, FINISH AS SELECTED BY ARCHITECT, 120V INPUT
B	22W KED	WAC LIGHTING	WTK-LED522-X-35-XX	TRACK	3-1/4" DIAMETER X 4" D X 6-1/2" H TRACK SPOT LIGHT, ELV DIMMING, BEAM FLOOD AND FINISH AS SELECTED BY ARCHITECT, 120V INPUT
C	20W LED SPX 35	WAC LIGHTING	FM-214-35-WT	SURFACE	14" DIAMETER X 4" HIGH BOWL FIXTURE, WHITE FINISH, ELV DIMMING, 120V INPUT
D	14W LED SPX 35	WAC LIGHTING	MO-1014-X-835-XX	SURFACE	2" DIAMETER X 3-1/4" HIGH SPOT LIGHT ON 4-1/2" DIAMETER X 5/8" HIGH MONOPONT TRACK, BEAM AND FINISH AS SELECTED BY ARCHITECT, ELV DIMMING, 120V INPUT
EM	NA	EMERGLITE	LSM54-0	WALL	BATTERY PACK TO POWER TYPE 'V' REMOTE HEAD, REMOTE HEAD CAPACITY 54W FOR 90 MINUTES, 120V INPUT - 12V OUTPUT
EM1	(2) 5W LED	EMERGLITE	LSM54-210-L1	WALL	BATTERY PACK 54W BATTERY FOR 90 MINUTES, INCLUDES (2) 12V-5W MR16 LED HEADS, 120V INPUT
EM2	(2) 9W LED	MULE	CVT-LED-18-NC-0	RECESSED	CONCEALED TYPE EMERGENCY BATTERY PACK, GALVANIZED STEEL HOUSING W/ ALUMINUM DOORS, 90 MINUTE BATTERY BACKUP, 120V INPUT
F	31.6W SPX 35	COLUMBIA	MPS-4-35-ML-CW-EU	SURFACE	1' X 4' INDUSTRIAL STRIP LIGHT, 120V INPUT
F1	31.6W SPX 35	COLUMBIA	MPS-4-35-ML-CW-EU-ELL14	SURFACE	1' X 4' INDUSTRIAL STRIP LIGHT, WITH INTEGRAL BATTERY BACKUP, 120V INPUT
G	16W SPX 35	WAC	FM-616G2-930-WT	SURFACE	6" DIAMETER DOWNLIGHT, 120V INPUT
H	20W LED SPX 30	HUBBELL	MBUL-1L3K-1	GROUND	MINIATURE FLOOD SPOTLIGHT, 1/2" KNUCKLE AND STAKE MOUNTING, 6.75" STAKE, WIDE BEAM, 120V INPUT
I	8W LED SPX 35	SPI LIGHTING	EEW12121-L6W-120-277V-35-XXX-XXX	STEP	3.5"W X 12.5"L FIXTURE IN OUTDOOR STEPS, UL WET LOCATION LISTED, MOUNTING AND FINISH AS SELECTED BY ARCHITECT, 120V INPUT
J	(2)4W LED SPX 35	EMERGLITE	EF150D-X-LG	WALL	2 LAMP REMOTE HEAD, 12V INPUT
K	15W LED SPX 35	ELEMENT	3" LED REMODEL ADJUSTABLE DOWNLIGHT XXX	RECESSED	3" DIAMETER REMODEL, 0-10V DIMMING DRIVER, FINISH AS SELECTED BY ARCHITECT, 120V INPUT
L	15W LED SPX 35	TECH	ESSF1206U-X-73-930-FW-F-1-B-D POWER SUPPLY: ESPR10024ND120-277 SURFACE MOUNT CLJP: ESCLPSF12	SURFACE	1.18"H X 0.66"D X LENGTH TO BE FIELD DETERMINED, ENCLOSURE TO HOUSE LED TAPE, FROSTED STATIC WHITE LENS, WHITE FINISH, FIELD ASSEMBLE, 120V INPUT TO REMOTE POWER SUPPLY
M	100W MAX	REJUVENATION	A1836	SEMI-FLUSH	7" W X 9" L FIXTURE WITH 5" HIGH SHADE, OIL RUBBED BRONZE FINISH, 120V INPUT
N	22W LED SPX 35	ALAPHABET	RD1MW-XTM19-20LM-83-XXXX-120-DIM10-RET-XX-XX	RECESSED	4" DIAMETER DOWNLIGHT, TRIM COLOR AND BEZEL COLOR AS SELECTED BY ARCHITECT, 120V INPUT

PANELBOARD 'MDP'													
240/120V, 1#, 3W, S/N, SURFACE, 200A MAIN CIRCUIT BREAKER													
CKT#	DESCRIPTION	LOAD KVA	CR. BREAKER POLES	AMP	WIRE & CONDUIT	#A	#B	WIRE & CONDUIT	CR. BREAKER AMP	POLES	LOAD KVA	DESCRIPTION	CKT#
1	STOVE	-	2	50	2 #8 & 1 #10 GRD - NM			2 #12 & 1 #12 GRD - NM	20	1	-	REFRIGERATOR	2
3	MAIN LIGHTS	-	1	20	2 #12 & 1 #12 GRD - NM			2 #12 & 1 #12 GRD - NM	15	1	-	FURNACE	4
5	SPARE	-	1	20									6
7	FIRE ALARM	-	1	15	2 #12 & 1 #12 GRD - NM			EXTEND EXISTING WIRING	20	2	-	HOT WATER HEATER	8
9	SUMP PUMP	-	1	20	2 #12 & 1 #12 GRD - NM				20	1	-		10
13	LTG - BASEMENT	-	1	15	2 #12 & 1 #12 GRD - 3/4"C			2 #12 & 1 #12 GRD - 3/4"C	20	1	-	REC. - BASEMENT	14
15	REC. - BASEMENT	-	1	15	2 #12 & 1 #12 GRD - 3/4"C			2 #12 & 1 #12 GRD - 3/4"C	20	1	-	REC. - BASEMENT	16
17	REC. - BASEMENT	-	1	15	2 #12 & 1 #12 GRD - 3/4"C				20	1	-		18
19	REC. - KITCHEN	-	1	15	2 #12 & 1 #12 GRD - NM			2 #12 & 1 #12 GRD - NM	20	1	-	REC. - KITCHEN	20
21	REC/LTG - 1ST FL	-	1	15	2 #12 & 1 #12 GRD - NM			2 #12 & 1 #12 GRD - NM	20	1	-	LTG - RM 103	22
23	REC - 1ST FL	-	1	15	2 #12 & 1 #12 GRD - NM			2 #12 & 1 #12 GRD - NM	20	1	-	EXTERIOR	24
25	TRACK LTG. RM 109	-	1	15	2 #12 & 1 #12 GRD - NM			2 #12 & 1 #12 GRD - NM	20	1	-	REC. - 2ND FL	26
27	EXTERIOR SIGN LTG.	-	1	15	2 #12 & 1 #12 GRD - 3/4"C			2 #12 & 1 #12 GRD - NM	20	1	-	REC. - 2ND FL	28
29	LTG. RM 102/102A	-	1	15	2 #12 & 1 #12 GRD - NM				20	1	-		30
31	EM. LIGHTING INVERTER	-	1	15	2 #12 & 1 #12 GRD - 3/4"C				20	1	-		32
33	-	-	1	15	-				20	1	-		34
35	-	-	1	15	-				20	1	-		36
37	-	-	1	15	-				20	1	-		38
39	PANEL RP-2	-	2	100	SEE SINGLE LINE				20	1	-		40
41	SUB TOTAL KVA	-									-	SUB TOTAL KVA	42

PANELBOARD 'RP-2'													
240/120V, 1#, 3W, S/N, SURFACE, 100A MAIN CIRCUIT BREAKER													
CKT#	DESCRIPTION	LOAD KVA	CR. BREAKER POLES	AMP	WIRE & CONDUIT	#A	#B	WIRE & CONDUIT	CR. BREAKER AMP	POLES	LOAD KVA	DESCRIPTION	CKT#
1	LTG - 2ND FL	-	1	20	2 #12 & 1 #12 GRD - NM			2 #12 & 1 #12 GRD - NM	20	1	-	REC. - RM 203	2
3	LTG - RM 202/208	-	1	20	2 #12 & 1 #12 GRD - NM			2 #12 & 1 #12 GRD - NM	20	1	-	REC. - RM 202/208	4
5	LTG - RM 207	-	1	20	2 #12 & 1 #12 GRD - NM			2 #12 & 1 #12 GRD - 3/4"C	20	1	-	REC./LTG - ATTIC	6
7	-	-	1	20	-				20	1	-		8
9	-	-	1	15	-				20	1	-		10
11	-	-	1	20	-				20	1	-		12
13	-	-	1	15	-				20	1	-		14
15	-	-	1	15	-				20	1	-		16
17	-	-	1	15	-				20	1	-		18
19	-	-	1	15	-				20	1	-		20
SUB TOTAL KVA		-									-	SUB TOTAL KVA	

SYMBOL LIST & ABBREVIATIONS	
	LIGHT FIXTURE - SEE LIGHTING FIXTURE SCHEDULE
	EMERGENCY LIGHT FIXTURE - SEE LIGHTING FIXTURE SCHEDULE
	EMERGENCY BATTERY PACK - SEE LIGHTING FIXTURE SCHEDULE
	REMOTE HEAD - SEE LIGHTING FIXTURE SCHEDULE
	POWER SUPPLY
	DUPLEX RECEPTACLE, 20A, 125V, 2 POLE, 3 WIRE, GROUNDED GFI INDICATES GROUND FAULT INTERRUPTION
	DOUBLE DUPLEX (QUAD) RECEPTACLE
	DUPLEX RECEPTACLE MOUNTED ABOVE COUNTER HEIGHT
	SPECIAL PURPOSE RECEPTACLE, NEMA TYPE AS NOTED
	VOICE/DATA OUTLET - 4" X 4" OUTLET BOX WITH (1) 15A, 125V, 2 POLE, 3-WIRE, GROUNDED RECEPTACLE
	FLUSH FLOOR MOUNTED DEVICE BOX, WIREMOLD 862 SERIES WITH 3/4" STUBBED UP ABOVE NEAREST ACCESSIBLE CEILING VERIFY LOCATION IN FIELD
	SINGLE POLE SWITCH
	3-WAY SWITCH
	DIMMER SWITCH, WATTSTOPPER MODEL DCLVI OR APPROVED EQUAL
	MANUAL MOTOR STARTER
	MOTOR
	JUNCTION BOX
	UNFUSED DISCONNECT SWITCH
	FUSED DISCONNECT SWITCH
	FIRE ALARM SMOKE DETECTOR
	240/120V PANELBOARD
	WIRE & CONDUIT, CONCEALED IN CEILING OR WALL
	WIRE & CONDUIT, CONCEALED IN OR BELOW FLOOR
	WIRE & CONDUIT, CONNECTION TO EQUIPMENT
	EXISTING
	HOT WATER HEATER
	EXISTING TO BE RELOCATED, CAREFULLY REMOVE AND STORE ON SITE. DISCONNECT AND REMOVE OLD WIRING
	EXISTING TO BE REMOVED
	RELOCATE EXISTING TO THIS LOCATION, COORDINATE EXACT LOCATION IN FIELD, PROVIDE NEW WIRING TO EXTEND EXISTING WIRING AS REQUIRED, MATCH EXISTING WIRING TYPE AND SIZE
	WEATHERPROOF

KELTER & GILLIGO
consulting engineers
P.O. BOX 777 148 PRINCETON-HIGHTSTOWN RD.
PRINCETON JUNCTION, NEW JERSEY 08502
Frank Tindoll, P.E.
Professional Engineer
NJ 38656

SCALE: AS NOTED
DRAWN BY: GG
DATE: 8/1/22

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HMR ARCHITECTS

E-5

SCHEDULES & DETAILS - ELECTRICAL

STRUCTURAL REPAIRS & ELECTRICAL UPGRADES TO THE
BURROWES MANSION
THE BOROUGH OF MATAWAN
94 MAIN STREET, MATAWAN, MONMOUTH COUNTY, NJ

July 27, 2022 6:05:44 p.m.
Drawing: 2358 ELDWG

ISSUED FOR BID - AUGUST 1, 2022

E-5

ELECTRICAL SPECIFICATIONS

GENERAL REQUIREMENTS

This Section is coordinate with and complementary to the General Conditions and Special Requirements.

Drawings are diagrammatic. Sizes and locations of equipment are shown to scale where possible, but may be distorted for clarity on the Drawings. Final locations shall be as required or directed.

Light and power system riser diagrams and schematic diagrams generally indicate equipment and connections to be used for various systems. System conduit and wiring shall be as required. Provide all work shown on diagrams whether or not it is duplicated on the plans.

SCOPE OF WORK

In general the work includes, but is not limited to the following:

1. Raceways and installation components.
2. Wire and Cable.
3. Fuses.
4. Safety and disconnect switches.
5. Manual motor starters.
6. Grounding.
7. Lighting fixtures.
8. Electrical provisions for fire and life safety.
9. Testing.
10. Seismic restraints.
11. Furnishing of access doors.
12. Furnishing and setting of all sleeves through the floors and walls where required, including waterproofing, fireproof sealing, and cap flashing.
13. Waterproofing, fireproof sealing, and cap flashing.
14. Cutting, drilling and boring associated with electrical work.
15. Prime painting, where required for electrical equipment and installation.
16. Provisions for temporary light and power.
17. Final connection of all equipment unless otherwise noted.

QUALITY ASSURANCE AND STANDARDS

The complete installation shall be in accordance with NJUCC (The State Building Code).

Contractor shall be responsible for securing all permits and obtaining all necessary approvals. He shall complete all required forms and pay all associated fees.

SUBMITTALS

The Contractor shall submit shop drawings for all systems and components with such promptness as to cause no delay in his own work or that of another contractor.

EXAMINATION OF EXISTING CONDITIONS ON PREMISES

Before submitting his bid, this Contractor shall visit the site of the work and shall thoroughly familiarize himself with the existing conditions affecting the work. By the act of submitting a bid, the Contractor shall be deemed to have made such an examination, to have accepted such conditions, and to have made allowance therefor in preparing his bid. No additional compensation will be granted on account of extra work made necessary by the Contractor's failure to investigate such existing conditions. Verify all grades, elevations, dimensions, and clearances at the site.

COORDINATION OF WORK WITH OTHER TRADES

The contractor shall coordinate the work of this Section with the work of all other Contracts and the Utility Companies. It shall be so arranged that there will be no delay in the proper installation and completion of all work.

INSPECTION AND TESTS

The entire wiring system must test free from shorts and open circuits. Every ground shall be tested for compliance with standards listed below.

PROTECTION, MAINTENANCE AND PRODUCT HANDLING OF ELECTRICAL EQUIPMENT

Electrical equipment shall be delivered and stored at the site, properly packed and crated until finally installed. Provide effective protection against damage for all material and equipment during shipment and storage at the Project Site. This Contractor shall be responsible for the maintenance of all installed equipment and systems until final acceptance by the Owner.

GUARANTEE

This Contractor shall guarantee in writing to the Owner that all work installed by him shall be free of defects in workmanship and materials and that all apparatus will develop the capacities and characteristics as indicated, and that, if during a period of one year from date of final approval of work by the Architect, any defects in workmanship, materials or performance appear, he will remedy them without any cost to the Owner.

ACCESSIBILITY AND MEASUREMENTS

All work shall be installed so as to be readily accessible for operation, maintenance, and repair. Minor deviations from the plans may be made to accomplish this, subject to approval.

Before ordering any material or doing any work, the Contractor shall verify all measurements at the Building, and shall be responsible for the correctness of same as related to the work under this Contract.

TEMPORARY LIGHT AND POWER

The Electrical Contractor shall furnish, install, and maintain the temporary lighting and power system for all Contractors. Provide temporary power for all construction areas as required. The use of electricity shall be kept to a minimum. The Owner will pay for all energy required by the temporary lighting and power system.

Provide all wiring, supports, lamp sockets, receptacle outlets and any other materials, supplies or equipment necessary for temporary light and power system. Ground fault protection shall be as required by OSHA.

Install separate stringer circuits for lighting and receptacles. Provide one lamp socket and one duplex receptacle for every 400 square feet of new general construction area. (Approximately 20 feet on centers).

Provide sufficient supplementary temporary lighting to permit proper execution of the work.

Keep the temporary lighting and power system operational commencing fifteen (15) minutes before the established starting time of that trade which starts work earliest in the morning and ending fifteen (15) minutes after the established quitting time of that trade which stops work latest in the evening.

IDENTIFICATION NAMEPLATES

Identify and mark all electrical equipment to meet OSHA standards and as specified herein.

Unless otherwise noted, nameplates shall be black laminate with white letters of uniform size consisting of reasonably large capital letters, 3/16 inch minimum.

SEISMIC RESTRAINTS

Provide lateral restraints for all electrical equipment installed on project, i.e., Battery racks, ballast racks, cable trays, conduits, generators, lighting fixtures, panels and transformers. Typically, lateral restraints shall consist of angle iron and "uni-strut" bracing, cross bracing, hanger rods, anchor clips, expansion shield anchor bolts, etc. The purpose of the restraints is to provide resistance to lateral (horizontal) movement during earthquake.

All equipment shall be anchored to the floor, ceiling structure or walls.

All suspended equipment, wiring trough and conduit trade size 2-1/2" or larger shall have (lateral) horizontal bracing capable of resisting 50% of the equipment weight. Horizontal bracing shall be placed at each point where vertical supports are specified or required.

All life safety equipment, and conduit shall have lateral bracing capable of resisting 100% of the equipment weight.

Recessed and surface mounted light fixtures must be secured to the ceiling system so as to resist 50% of their weight laterally. i.e. a 40 pound fixture must be resistant to a 20 pound lateral force. Life safety lighting fixture must be secured to the ceiling system so as to resist 100% of their weight laterally. Suitable anchor clips must be provided for all 1/2-in fixtures. Surface mounted fixtures must be supported at two points in addition to the outlet box.

RACEWAYS AND INSTALLATION COMPONENTS

The requirements of this Section apply to raceway work specified elsewhere in these specifications.

The work includes the providing of completely coordinated grounded raceway systems complete with boxes, fittings, flexible connections to vibrating equipment and accessories, as specified and as required for a complete system.

The work permits the use of Type MC & NM cable in conjunction with conduit as noted. See below.

Raceways and fittings shall be manufactured by Triangle or approved equal by Allied or Republic.

Intermediate metal conduit (IMC) shall be intermediate steel pipe, hot dip galvanized, threaded, minimum 3/4 inch.

Electric metallic tubing (EMT) shall be steel thin wall pipe, galvanized, threadless, minimum 3/4 inch, maximum 2 inch.

Flexible steel conduit (Greenfield) shall be continuous single strip, galvanized, minimum 3/4 inch.

Liquid-tight flexible steel conduit (Seal-Tite) shall be zinc coated, consist of flexible galvanized steel tubing over which is extruded a liquid-tight sheathing of polyvinyl chloride (PVC). Conduit shall be provided with a continuous copper bonding conductor wound spirally between the convolutions.

Electrical metallic tubing fittings shall be compression waterproof connection type. Set screw or indent type connectors are not permitted.

Flexible steel conduit (Greenfield) fittings shall be multiple point type, threading into the internal wall of the conduit convolutions, and shall have insulated throat.

Liquid-tight flexible metal conduit fittings shall incorporate a threaded grounding cone, a steel or plastic compression ring, and a gland for tightening. Connectors shall have insulated throats.

Expansion and deflection couplings shall be manufactured by O-Z/Gedney, Crouse-Hinds, Applenton or approved equal.

Individual conduit hangers, shall be designed for the purpose, and have pre-assembled closure bolt and nut, and provisions for receiving hanger rod.

Multiple conduit (trapeze) hangers shall be not less than 1-1/2 by 1-1/2 inch, 12 gauge steel, cold formed, liped channels. Hanger rods shall be not less than 3/8-inch diameter steel.

Solid masonry and concrete anchors shall be a type approved for the purpose.

Provide and assume responsibility for locating and maintaining in proper position all sleeves required for the work.

Openings through floors and walls in which cables, conduits, or pipe pass shall be sealed by U.L. classified smoke and fire stop fittings, and have an hourly rating equal to the fire rating of the floor or wall. Fittings shall be similar to O-Z/Gedney Type "CFS" or "CAFS".

Penetrations through fire-rated floors in which wiring for floor service outlets are routed shall be sealed by U.L. classified smoke and fire-stop fittings, and shall have an hourly rating equal to the floor rating. Fittings shall be similar to O-Z/Gedney Type "TIFS".

Outlet boxes shall be manufactured by Raco, RussellStoll, Steel City, Thomas & Betts or Crouse Hinds

Outlet boxes for concealed work shall be galvanized steel, 4 in. square or octagon (except as otherwise required by construction, device or wiring). Provide sufficient depth for application.

Offset back-to-back outlet boxes shall have minimum 6 in. separation between them. In rated walls, they are to be separated by a stud.

Junction, splice and pull boxes shall be made of code gauge sheet steel with removable covers fastened with brass or stainless steel screws, except as noted, and will include insulated supports for cables. Box dimensions shall conform to N.E.C. requirements.

Provide junction, splice and/or pull boxes as noted or as required to facilitate pulling of conductors or in raceway runs that have more than three (3) 90-degree bends.

Boxes shall have a gray enamel finish.

Wireways shall be as manufactured by Square D, General Electric, or approved equal. Wireways shall be square, brake-formed of code gauge steel, furnished in standard 10-foot sections with knockouts as required. Wireways shall be of the screw cover type and all necessary offset and elbow fittings. They shall have a gray enamel finish. Size shall be as required for proper cable fill.

Install raceway and installation components as indicated, in accordance with manufacturer's written instructions, applicable requirements of NEC and in accordance with the recognized industry practices, to ensure that products serve intended function.

Raceway supports shall be provided by means of ceiling trapeze, strap hangers, or wall brackets. Use structural steel angles or channels, or manufactured steel support system. Spacing of supports shall be as per NEC and per manufacturer's recommendations but in no case shall exceed 8'-0" on centers. Provide U-bolts at each floor level for riser raceways and anchor to acceptable supports. Secure raceways to supports with pipe straps or U-bolts.

Mechanically join all metal raceways, enclosures and junction boxes to assure continuity.

Branch circuit conduits shall be supported by the building structure.

Provide expansion-deflection fittings at expansion joints in accordance with manufacturer's recommendations. Expansion-deflection fittings shall be used for all trade sizes 1-1/4" or larger. For trade sizes up to 1" in size, a suitable length of flexible conduit (or liquid-tight flexible conduit) with sufficient slack for movement and grounding conductor fastened on each side of joint shall be permitted.

EMT is to be used for feeders and branch circuits in dry locations such as hung ceilings, interior hollow block walls and furred spaces.

Flexible steel conduit shall be used in dry locations for short connections where rigid conduits or tubing is impracticable, and for final connections to lights and equipment other than motors and transformers.

Liquid-tight flexible steel conduit shall be used in damp locations for final connections to motor terminal boxes, transformers, and other vibrating equipment in damp and dry locations.

In general, cutting and core drilling is to be avoided. Where it becomes necessary, locations are to be coordinated with other trades, the Owner and the structural engineer. There is to be no cutting or core drilling without prior approval.

Provide an outlet box for each lighting fixture and device shown, or required, in the wiring system.

Provide galvanized steel extension rings (depth as required) and raised cover plates in plaster, dry wall, masonry and tile walls.

Mount outlet boxes for similar equipment at uniform height within same or similar areas.

Outlet boxes for fixtures recessed in non-accessible ceilings shall be accessible through the opening created by the removal of the fixture or through access doors provided by this contractor.

All outlet boxes in finished areas for convenience receptacles or local switches shall be 4" square and 1-5/8" deep minimum. Provide with regular deck switch extension cover.

Boxes for use with surface mounted raceways shall be of the same construction and manufacture as the raceway.

Provide junction, splice and pull boxes where required to facilitate installation of wiring, whether or not shown on Drawings. Size boxes according to code, and provide interior partitions, insulated supports, hot dip galvanized angle iron braces, screw-on one-piece or split covers, ground connectors, and other accessories as required.

Support all material from the building structure in an approved manner.

Where electrical equipment is mounted in suspended ceiling panels, provide support members to span between runners of ceiling suspension system. Do not support electrical equipment from acoustical panels or other ceiling material, attach to this material for alignment only.

Where electrical outlet boxes, lighting fixtures, and other equipment is installed on tee bars of suspended ceilings, use independent support clips with threaded studs. Do not attach to tee bar except for alignment; use clip similar to Caddy "IDS" that snaps around tee bar and has provisions for independent support wire. Attach a suitable anchor in the structure above ceiling, and suspend a minimum No. 12 support wire to engage the clip.

Do not exceed manufacturer's load rating for mounting devices.

At drywall partitions, provide support members to carry weight of equipment; do not use drywall material to carry any weight.

WIRE AND CABLE

The work includes providing wire and cable complete with all accessories in accordance with Drawings and Specifications and as required for a complete system. Wiring size referenced in this Section shall be AWG, except as noted.

This project has been designed for copper conductors. Aluminum conductors are not acceptable and shall not be used. Cable shall be manufactured by Triangle or approved equal by Carol or Guardian Products.

No. 10 and smaller conductors shall be ASTM Standard, solid, copper; and, No. 8 and larger conductors shall be ASTM standard, stranded copper.

Minimum conductor size shall be No. 12 for lighting and power and No. 14 for control and alarm. Increase wire sizes as required for long runs to overcome voltage drop.

Communications and signal wiring shall conform to the recommendations of the manufacturer's communication and signal systems and shall be specified in respective Sections of these Specifications.

"THWN" or "XHHW" insulation shall be used for interior branch circuit and feeder wiring. Rating shall be 90oC in dry locations and 75oC in wet locations.

Green colored insulated wire shall be used for all grounding applications.

Phase wires shall match existing building system.

Provide O-Z/Gedney Type "CSB" series or approved equal seal fittings between the wire and conduit for all cable and wire entering the building from underground, including service cables.

Not more than 3 current carrying conductors shall be in one (1) conduit unless otherwise indicated. Provide one neutral conductor for each 3 phase 4 wire homerun to a panelboard unless otherwise noted.

MC cable shall comply with the NEC article 330. MC cable shall be as manufactured by AFC or approved equal by Guardian Products.

MC cable shall include a green insulated ground wire of the same size as the other conductors.

Run MC cable in dry hollow metal partitions and above suspended ceilings. Install cable as slack span; do not pull tight. Maintain at least 6" clearance between parallel runs of light and power wiring to avoid inductive coupling. Maintain at least 24" clearance from hot water and steam piping. Provide conduit sleeves through walls and partitions that obstruct horizontal passage of wiring, and seal sleeves after installation of cables. Cable shall be secured by approved staples, hangers or similar fittings independent of ceiling grids or supports.

MC cable shall be used in conjunction with conduit. Cable shall only be permitted for single phase circuits in hollow metal walls and above accessible ceilings. Single phase cable runs shall be gathered into three phase conduit homeruns. In no case shall cable enter directly into panelboards.

Secure MC cable to ceiling structure at intervals not to exceed 6 feet and within 12 inches of every outlet box, junction box, or fitting.

Make wire splices electrically and mechanically secure. Install small wire connectors so that no bare conductor is exposed. Tighten bolts on large conductor connectors so that conductor is deformed, but do not break strands of wire. Use compression tool with proper die for compression connectors in accordance with manufacturer's recommendations, so that conductors are deformed but not broken. Apply insulation over splice so that insulation thickness is at least 1-1/2 times that on conductor. Lap applied insulation at least 1" over conductor insulation so that no bare conductor is exposed.

In general, all feeders No. 8 and larger shall be continuous from point of origin to equipment being served. Splices shall only be used where necessary and with prior written approval of the Engineer.

Terminate conductors on terminal strips in equipment where terminal strips are used. Provide appropriate connectors, or hook conductors around terminal screws as required.

Provide encapsulated splice kits (3-M type 85 series or approved equal) for all splices in areas subject to moisture, including wet locations inside buildings and underground handholes, manholes, and buried junction boxes. Install splice kit in accordance with manufacturer's recommendations, and make splice waterproof. Apply sealing putty to surround each cable. Install mold body so that resin covers each cable sheath by a minimum of one inch.

All copper conductors No. 8 & larger shall be terminated, spliced, and tapped with color-keyed compression connectors, as manufactured by Thomas & Betts Co. Series 34000, Ideal Industries Series 87000, or approved equal. The manufacturer's recommended tooling shall be used. Mechanical type connectors shall not be used.

All copper conductors No. 10 AWG & smaller shall be terminated and spliced with Ideal Industries wing-nut wire connectors or approved equal compression connectors. The flame-retardant, thermoplastic insulated type shall be used to isolate the terminal from other metal parts and equipment.

Use insulating boots supplied for compression connectors or fill joint with "Scotchfill" insulating putty and serve (3) 1/2 lap layers of "Scotch" #33 electrical tape.

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Check motor nameplates for full-load current rating and allowable temperature rise to determine overload heater elements. Install correct heater element in the corresponding starter. Verify proper rotation.

Furnish motor safety disconnect switches for all motors except where such switches are specified to be furnished in other divisions or are included in the equipment control panel. Install all motor safety disconnect switches furnished under this Division or other Divisions of the Specification. Install manually-operated devices, such as push-buttons and manual starters, to permit convenient operation and be readily accessible.

Install "SealTite" flexible conduit for final connections to all motors and vibrating equipment including transformers.

Individual starters furnished by others shall be received and erected under this Section. Starters shall be individually or group mounted plumb and level, on freestanding angle iron frames, supplied under this Section.

Provide manual motor starters for all fractional horsepower motors as shown on the Drawings or otherwise required.

SAFETY AND DISCONNECT SWITCHES

Switches shall be heavy-duty and service rated. They shall be General Electric Type "TH" or equal by Square D, Cutler Hammer, or Siemens. Switches shall include solid neutral where required. Provide auxiliary contacts where required to break motor control circuit power.

Interior enclosures shall be NEMA 1. Enclosures shall have interlocked doors and be capable of being positively padlocked in ON and OFF positions.

PANELBOARDS

The interior distribution system, in general, consists of 1-phase, 3-wire mains at 120/240 volts. The contractor shall balance the load on all feeders as nearly as possible on each phase after the system is fully energized and all components are functioning.

Panelboards shall be GE Type A or approved equal by Siemens, Square D or Eaton.

Panel circuit breaker overcurrent protective devices shall be as scheduled on the Drawings and as specified. All breakers shall be bolted-on thermal magnetic type. Bus shall be silver plated copper.

Panel circuit breakers shall be rated for 10,000 RMS symmetrical amperes minimum interrupting rating at 120/208 volts. Provide higher ratings as required or as scheduled on the Drawings.

Cabinets and trim shall be fabricated of code gauge steel, with hinged door, lock and catch, and directory pocket covered with clear plastic shield over directory.

Furnish and install a typewritten circuit directory. Hand written will not be accepted.

Distribution panels shall be provided with molded case circuit breakers as specified for panelboards. Breakers through 225 ampere frame sizes shall be thermal-magnetic trip with inverse time current characteristics unless otherwise noted.

Lighting fixtures shall be heavy-duty and service rated. They shall be General Electric Type "TH" or equal by Square D, Cutler Hammer, or Siemens. Switches shall include solid neutral where required. Provide auxiliary contacts where required to break motor control circuit power.

Interior enclosures shall be NEMA 1. Enclosures shall have interlocked doors and be capable of being positively padlocked in ON and OFF positions.

Panelboards shall be GE Type A or approved equal by Siemens, Square D or Eaton.

Panel circuit breaker overcurrent protective devices shall be as scheduled on the Drawings and as specified. All breakers shall be bolted-on thermal magnetic type. Bus shall be silver plated copper.

Panel circuit breakers shall be rated for 10,000 RMS symmetrical amperes minimum interrupting rating at 120/208 volts. Provide higher ratings as required or as scheduled on the Drawings.

Cabinets and trim shall be fabricated of code gauge steel, with hinged door, lock and catch, and directory pocket covered with clear plastic shield over directory.

Furnish and install a typewritten circuit directory. Hand written will not be accepted.

Distribution panels shall be provided with molded case circuit breakers as specified for panelboards. Breakers through 225 ampere frame sizes shall be thermal-magnetic trip with inverse time current characteristics unless otherwise noted.

Lighting fixtures shall be heavy-duty and service rated. They shall be General Electric Type "TH" or equal by Square D, Cutler Hammer, or Siemens. Switches shall include solid neutral where required. Provide auxiliary contacts where required to break motor control circuit power.

Interior enclosures shall be NEMA 1. Enclosures shall have interlocked doors and be capable of being positively padlocked in ON and OFF positions.

Panelboards shall be GE Type A or approved equal by Siemens, Square D or Eaton.