



COUNTY OF UNION

DEPARTMENT OF ENGINEERING, PUBLIC WORKS & FACILITIES MANAGEMENT

Joseph A. Graziano Sr., Director

MEMORANDUM

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THOMAS O. MINEO, P.E.
*County Engineer,
Director, Division of Engineering*

TO: All Potential Bidders

FROM: Thomas O. Mineo, P.E.
County Engineer

DATE: July 29, 2021

RE: **ADDENDUM NUMBER 1**
**Board of Elections Leak Repairs
City of Elizabeth
County of Union, New Jersey
BA# 19 - 2021;
Union County Engineering Project #2019-024**

Attached is Addendum Number 1 dated July 29, 2021 for the above referenced project.

Please note that the attached "Addendum Number 1" form must be completed and submitted with the original bid submission packet.

DIVISION OF ENGINEERING

2325 South Avenue

Scotch Plains, NJ 07076

(908)789-3675

fax(908)789-3674

www.ucnj.org

We're Connected to You!

BIDDER'S NAME: _____

ACKNOWLEDGMENT OF ADDENDUM

ADDENDUM NUMBER 1

DATED: July 29, 2021

**Board of Elections Leak Repairs,
City of Elizabeth, County of Union,
New Jersey**

**Union County Engineering Project #2019-024
BA# 19-2021**

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 County of Union'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.

Union County is issuing Addendum #1 for the above mentioned project as described below:

Local Unit Reference Number or Title of Addendum/Revision	How Received (mail, fax, pick-up, etc.)	Date Received
ADDENDUM NUMBER 1: Please see the attached Addendum Number 1 (9 pages).		

ACKNOWLEDGMENT BY BIDDER:

NAME OF BIDDER: _____

ORIGINAL SIGNATURE: _____

PRINTED NAME AND TITLE: _____

DATE: _____

ADDENDUM NO. 1

DATED: 7/29/2021

July 29, 2021

RE: County of Union - Board of Elections Leak Repairs - BA#19-2021; UC# 2019-024

ADDENDUM #1

The contractor is hereby directed to review **all** notes on the bid package and the specifications. The General Notes, specifically notes #31, 46, 47, and 48 – clarify and reinforce Contractor’s responsibilities.

Q1. Define the scope of ACM removal indicating specific areas.

A1. The scope of ACM removal covers the entire basement area of 271 N. Broad and is specified in LCAE’s specs as well as the specifications of CME Associates in the bid package. DWG AR-1 and drawings and pictures by CME Associates cover all aspects.

Q2. Define specification of metal deck.

A2. DWG S-1 shows 6” concrete on corrugated sheet metal deck, to be replaced in-kind.

Q3. Provide specification for light fixtures.

A3. Drawing E-1 notes #2, 4, and 5 spell out the fixtures required. The 32 2-lamp 1’ x 4’ fixtures shall be replaced with similar 2-lamp LED fixtures with prismatic lenses. Likewise, the 8 4-lamp LED fixtures shall also have prismatic lenses to operate at 120 V. They shall be wired to match 120 V.

Q4. Provide specification for sump pump and clear details for replacement.

A4. Note #16 on DWG PL-1 specifies that the Contractor shall inspect the condition of the sump pump. For bidding purposes, pump replacement shall be included in the Contractor’s bid.

Q5. Provide location of key plan referenced on PL-1 at connection to 18” street sewer.

A5. The “key plan” is referenced to Detail “A” of DWG R-2. A detailed shop drawing is required from the Contractor showing how he plans to make the connection into the 6” pipe leaving the House Trap going to the 18” sewer pipe in the street.

Q6. New storm piping show as 4” on riser and 6” on detail “A”. Please clarify.

A6. DWG PL-1 shows the two storm drains (SW and NE) connecting and combining at Location “A” into the 6” PVC through Locations B and C into sewer line as shown on Detail of DWG RE- 2. A shop drawing required from the Contractor.

Q7. Confirm scope of cleaning required for existing piping.

A7. See notes #8 and 9 on DWG PL-1 and notes #45 through 48 on DWG G-1. For bidding purposes, assume all piping to be cleaned.

Q8. Provide details for all plumbing locations.

A8. DWG PL-1 shows all the details needed. The drawing shows a direct line from the NE roof drain to the SW roof drain. However, the Contractor must submit a working drawing showing how he plans to install it.

Q9. Storage closet wall identified to be removed on demo plans and appears to remain on floor plans. Please clarify.

A9. It was pointed out during the “walk-through” that the wall will not be replaced.

Q10. Demising wall at breakroom show to be removed on ACM drawings, but remain on floor plan.

A10. During the “walk-through” it was noted by Matt Ferraro (UC) that the wall in the “Breakroom” that was removed from floor to ceiling was not to be replaced.

Q11. Storm piping thru upper floors penetrates finished spaces. Will these require finished enclosures, if so, please clarify.

A11. Piping specification includes section on piping escutcheons for floor penetrations.

Q12. Define all new finishes required.

A12. The finishes required are all defined in the Paint Specifications, pages 353 through 362. Prior approval by tenant is required.

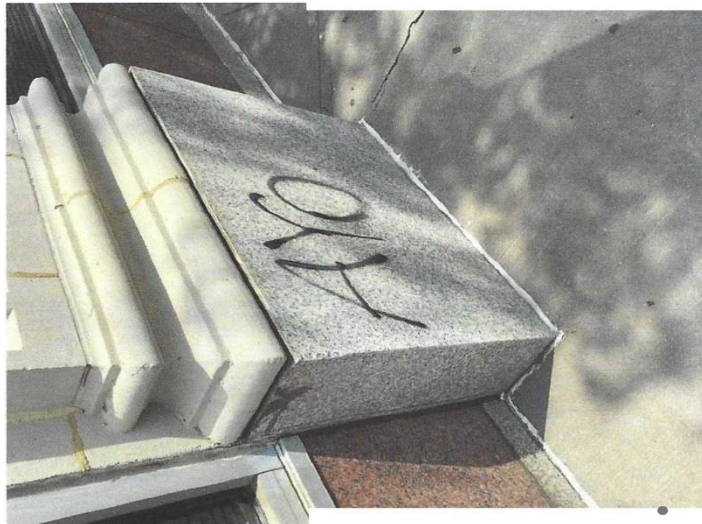
Q13. Confirm that the waterproofing system specified is suitable for a sidewalk application and acceptable to the city.

A13. The waterproofing system for sidewalk application does not need city approval, only tenant approval. According to Dan Loomis, City Engineer, the sidewalk is the tenant's sole responsibility.

Q14. Define scope of wires to be removed behind "Poster" on drawing RE-1.

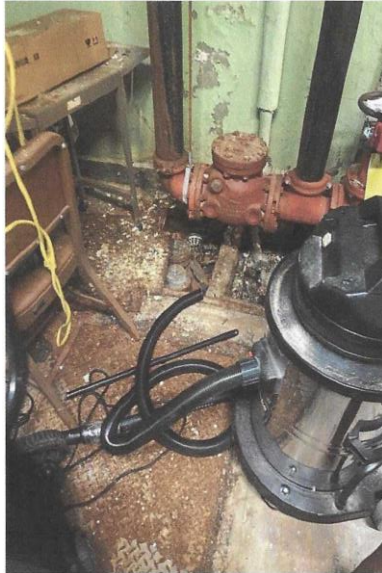
A14. The wires to be removed are old telephone lines and/or low voltage 24 volt wires no longer in use.

Q15. Sheet SR-1 detail directs the removal of the lower piece of the granite veneer attached to cold form steel system. It appears that the veneer and faux columns are original. At several locations there are plinths blocks and the faux columns as shown in the picture. Please detail the waterproofing interface with these plinths blocks that are at several locations. Also, it would be extremely rare that CFS was used in this building as the first known use of it in the US was in 1926. As such, there is a high probability that the granite will break or chip upon removal. Please provide the quarry, so matching granite can be provided



A15. If Contractor believes that the existing marble or other finishes will break when performing the work, then contractor should include in his/her bid the replacement of these pieces. Unless the owner has the information, we do not believe that quarry of the existing granite is available. Contractor will need to coordinate with Owner if and when replacing the granite is required.

Q16. Is the wye from the roof drain where it ties into the combined sewer downstream of the existing house trap also existing. The prints do not call for installing one or show it as a new connection point. Also, existing pipe is interfering with its location and cannot be installed where shown on the prints and within the scope of work shown on the prints. Please advise.



A16. Contractor is required to submit working drawings and shop drawings showing his proposed methodology for work to be performed.

Q17. The existing concrete encased steel beam has significant spalling .Is it the intent to remove the concrete from the beam completely? It is a composite design, can the concrete be removed while maintaining the structural integrity or have the columns been subsequently installed to make up the deficiencies in the beam. Please detail how and where we are to reinforce the beam so everyone is on the same playing field for the bid. Guidance is required so we can all bid on the same items.

A17. As indicated on the drawings, remove **only** cracked, loose and spalling concrete from the concrete encased beams. This is to eliminate the hazard of falling concrete pieces on people.

Q18. Sheet AR-1 note 4 states "Contractor shall remove all asbestos containing plaster near the storage room and throughout the basement including ceiling plaster above the suspended ceiling. Any plaster visible in the basement shall be considered to contain asbestos." This statement calls for a complete asbestos abatement of the basement including the ceiling in main room but also contradicts the scope and amount to be removed as defined by the legend and highlighted areas on the same sheet. Please clarify, as removal will require remounting of equipment, conduits, etc



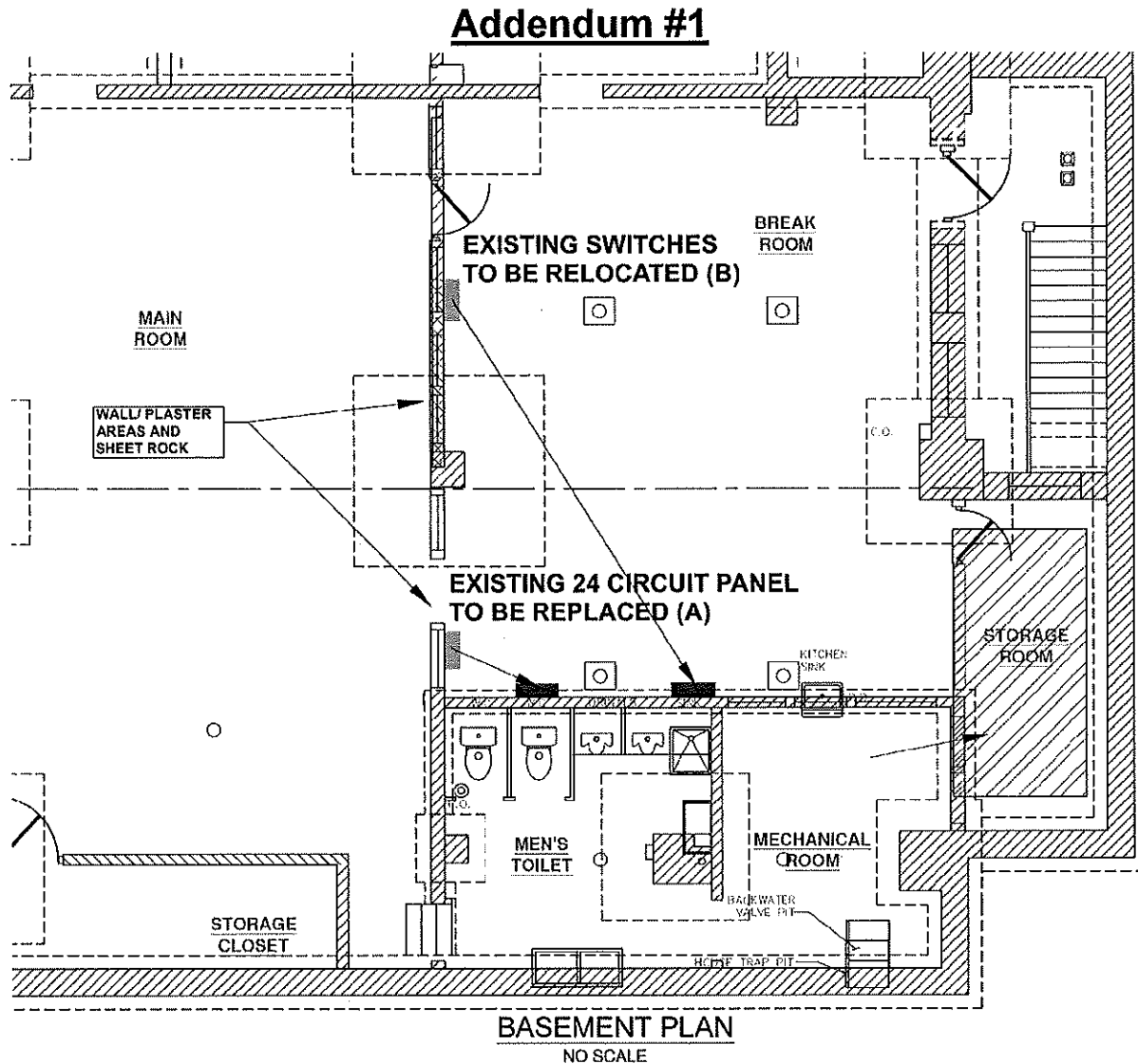
A18. Based on the findings of CME Associates, this work may require removal and/or remounting of equipment and conduits. See Spec section 16010 and 16075.

- Q19.** The roof drains are behind plaster walls on the 1st, 2nd and 3rd floors. Is this plaster containing asbestos requiring abatement?
- A19.** Plaster walls and sheetrock were not addressed by CME Associates in its Contract with Union County on the First, Second, and Third Floors.
- Q20.** On sheet PL - 1, Location A is shown as above the ceiling line in the main room. Please confirm that is the plaster ceiling and is that being abated and removed completely as noted in question 4 above.
- A20.** On DWG PL-1, location A is shown near the basement ceiling, and likewise the direct line from the NE storm drain and the SW storm drain.
- Q21.** Spec. section 15890 calls for HVAC air distribution cleaning with no quantities given or shown on the prints. Quantities and locations are required for a firm fixed price bid. Please provide.
- A21.** HVAC cleaning in Spec section 15890 includes the entire HVAC system and leaves the locations and the quantities for the Contractor to determine and include in the bid package.
- Q22.** Please provide a detail for the wall repair affected by the roof drain installation and existing damage ie. Millwork, ornamental plaster cornices, plaster or drywall system.
- A22.** Details for wall repair as required for the installation of the roof storm drain must be included in the working drawings and the shop drawings showing the proposed installation of both (NE and SW corners) roof storm drains. Include work in the bid.

Q23. Sheet DE-1 note 8 requires cleaning of the steel bars across the exterior windows. Was an analysis of the existing coating performed? Does it contain lead? Will lead abatement be required?



A23. No analysis of the existing coating was performed.



A. Existing 24 circuit panelboard containing:

- a. One (1) 60 A, 2 pole circuit breaker
- b. One (1) 20 A, 3 pole circuit breaker
- c. Thirteen (13) 1 pole circuit breakers
- d. Six (6) blank spaces

to be relocated as shown and replaced with a new surface-mounted panel. Maintain all feeder connections.

Contractor shall provide junction boxes, as required, to include the panel "A" main feeder and branch circuits to remain energized, from the power source and to the branch loads.

B. Two (2) existing switches to be relocated as shown.

Contractor shall provide junction boxes, as required, to maintain incoming and outgoing power wiring unchanged.

SPECIFICATIONS

FOR

**Board of Elections Leak Repairs,
City of Elizabeth, County of Union,
New Jersey**

BA#19-2021; Union County Engineering Project # 2019-024

JULY 2021

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**DEPARTMENT OF ENGINEERING, PUBLIC WORKS AND
FACILITIES MANAGEMENT**

Joseph A. Graziano, Sr., CPWM
Director, Department of Engineering, Public Works and
Facilities Management

**COUNTY ENGINEER
DIVISION OF ENGINEERING**

Thomas O. Mineo, P.E.

Prepared by:

LCA Engineering LLC
1609 Vauxhall Road, Suite 206
Union, NJ 07083
Tel: 908-258-7943, Fax: 908-258-7953
Contact: Luis C. Aguero, P.E.

**COUNTY OF UNION
NOTICE TO BIDDERS**

Sealed bids will be received by the assistant director of the Division of Purchasing, or her designee, at the County of Union, New Jersey on **August 12, 2021 at 11:30 a.m.**, prevailing time, in the **3rd Floor Conference Room**, U.C. Administration Building, 10 Elizabethtown Plaza, Elizabeth, New Jersey for

**Board of Elections Leak Repairs,
City of Elizabeth, County of Union,
New Jersey
BA#19-2021; Union County Engineering Project # 2019-024**

Bid Packages may be obtained at no charge by registering and downloading at <http://ucnj.org/bid-specs>. Bid Packages may also be obtained in person from the Division of Engineering at 2325 South Avenue, Scotch Plains, New Jersey 07076 between 8:30 a.m. and 4:00 p.m. weekdays upon payment of a non-refundable money order or bank check in the amount of \$275.00 made payable to the County of Union. No Personal / Company checks will be accepted. Requests for mailing of specifications will not be honored. For further information please call 908-789-3675.

The County reserves the right to reject any and all bids and to waive any and all informalities in the bid in accordance with the New Jersey Local Public Contracts Law.

***Public access to the County of Union Administration Building is currently restricted during the statewide public health emergency. Accordingly there will not be an in-person public opening but instead will be conducted live and streamed via the County of Union live streaming platform which will feature both audio and video capabilities. A link will be provided on the day of the opening at <https://ucnj.org/>.

Bidders on this project are required to be pre-classified by the State of NJ, Division of Property Management and Construction (DPMC) under classifications #C009 (General Construction/Alterations & Additions), #C029 (Structural Steel & Ornamental Iron Works), #C030 (Plumbing), #C047 (Electrical), C056 (Sewer Piping & Storm Drains), and #C092 (Asbestos Removal / Treatment) as well as other documentary requirements in the INSTRUCTION TO BIDDERS found in the bid specification. If the Bidder himself does not have the required classification(s) as stated above, the Bidder must include and identify a subcontractor(s), of any tier, who has the required classification(s) in the List of Subcontractors.

Pre- bid meeting will take place on July 21, 2021 at 10:00am. Please meet at 271 N. Broad Street, Elizabeth, New Jersey.

Bids shall be submitted in a sealed envelope and clearly marked with the subject of the bid, name and address of the bidder, phone & fax number, and date of the bid opening. Each bid must be delivered to reach the Division of Purchasing prior to the stated time of the opening of the bids. The County will not be responsible for late delivery by the U.S. Mail or any other carrier. Hand delivery of proposals are strongly discouraged due to public restrictions. If delivered by hand, you will not receive confirmation of delivery. **No** late bids will be accepted.

Bidders are required to comply with the requirements of N.J.S.A. 10:5-31 et seq. and N.J.A.C. 17:27.

***Entire bid packages received will be scanned and available for public inspection on the portal, <http://ucnj.org/itb>, as they would be available for public inspection after an in-person bid opening. Bidders are reminded to review their submissions for any information they consider to be confidential. The County will not be responsible for the release of any information contained in the bid package which may be subject to confidentiality.

MICHELLE HAGOPIAN, ASSISTANT DIRECTOR OF PURCHASING

Union County Board of County Commissioners

We're Connected to You!

**Board of Elections Leak Repairs,
City of Elizabeth, County of Union,
New Jersey
BA#19-2021; Union County Engineering Project # 2019-024**

TABLE OF CONTENTS

Cover Sheet: County Officials
NB-1: Notice to Bidders

GENERAL SPECIFICATIONS

Definitions

Section 1: BID FORM
Section 2: WITHDRAWAL OF BID DUE TO MISTAKE
Section 3: QUALIFICATIONS OF BIDDERS AND REQUIRED SUBMISSIONS
Section 4: INTERPRETATIONS AND ADDENDA
Section 5: OBLIGATION OF BIDDER TO INSPECT SITE AND CONTRACT DOCUMENTS
Section 6: BID AND PERFORMANCE GUARANTEE
Section 7: COMMENCEMENT AND COMPLETION
Section 8: BIDDER AFFIDAVIT
Section 9: LABOR AND MATERIALS
Section 10: INSURANCE REQUIREMENTS
Section 11: INDEMNIFICATION REQUIREMENTS
Section 12: ROYALTIES AND PATENTS
Section 13: PLANS AND SPECIFICATIONS
Section 14: GUARANTEE AGAINST DEFECTIVE WORK
Section 15: TRAFFIC AND STREET MAINTENANCE
Section 16: CONTRACTOR'S EMPLOYEES
Section 17: OWNERSHIP DISCLOSURES REQUIRED
Section 18: NON-COLLUSION AFFIDAVIT
Section 19: EQUAL EMPLOYMENT OPPORTUNITY COMPLIANCES
Section 20: COMPLIANCE WITH NEW JERSEY PREVAILING WAGE ACT
Section 21: BRAND NAME OR EQUAL
Section 22: LINES AND GRADES
Section 23: NUMBER OF WORKING DAYS
Section 24: PROMPT PAYMENT OF CONSTRUCTION CONTRACTS (NJ Prompt Payment Act)
Section 25: STOPPING WORK ON ACCOUNT OF BAD WEATHER
Section 26: ACCESS FOR OTHER CONTRACTORS
Section 27: CONDEMNED MATERIALS AND WORK
Section 28: STORAGE
Section 29: FINAL CLEAN UP
Section 30: SUB-LETTING OF WORK
Section 31: SAFETY
Section 32: QUALITY, SAFETY AND PERFORMANCE STANDARDS
Section 33: MATTERS NOT MENTIONED IN CONTRACT DOCUMENTS
Section 34: PERMITS
Section 35: CONTRACTOR TO PROVIDE PROOF OF PAYMENT
Section 36: CHANGE ORDERS
Section 37: SUPPLEMENTAL WORK
Section 38: FORM OF CONTRACT
Section 39: PROGRESS PAYMENTS
Section 40: INSPECTION
Section 41: DAMAGES
Section 42: LIQUIDATED DAMAGES
Section 43: AFFIRMATIVE ACTION REQUIREMENTS
Section 44: INVESTMENT ACTIVITIES WITH IRAN

GENERAL SPECIFICATIONS CONTINUED

- Section 45: COMPLIANCE WITH THE PUBLIC WORKS CONTRACTOR REGISTRATION ACT
(N.J.S.A. 34:11-56.48 et. seq.)
- Section 46: UTILITIES
- Section 47: MATERIAL COMPLIANCE AND SHOP DRAWINGS
- Section 48: PRECONSTRUCTION
- Section 49: DISPUTES UNDER THE CONTRACT
- Section 50: CONTRACTOR BUSINESS REGISTRATION CERTIFICATE
(New Mandatory Requirement – Effective 1/18/2010)
- Section 51: BID PROTEST - LEGAL FEES AND COSTS
- Section 52: AMERICAN GOODS AND PRODUCTS WHERE POSSIBLE
- Section 53: NEW JERSEY PAY-TO-PLAY REQUIREMENTS
- Section 54: STATEMENT OF EQUIPMENT TO BE USED IN CONSTRUCTION
- Section 55: NEW JERSEY SALES AND USE TAX REQUIREMENTS

BIDDING DOCUMENTS

- Bid Document Submission Checklist
- Bidding Documents
- Bid Form
- Consent of Surety
- Bidder Signature Page
- Bidder Disclosure Statement
- Subcontractor Identification Statement: List of Subcontractors
- Subcontractor Identification Certification
- Acknowledgement of Addendum
- Contractor Business Registration Certificate
- Affirmative Action Requirement
- Experience Statement
- Certificate of Bidder Showing Ability to Perform Contract
- Non-Collusion Affidavit
- Contractor Registration Advisement
- Americans with Disabilities Act
- Statement of Bidder's Qualifications
- Contractor Performance Record
- Affidavit Regarding List of Disbarred, Suspended or Disqualified Bidders
- Prior Negative Experience Questionnaire-Certification
- Contractor's Certification of Compliance - New Jersey Prevailing Wage Act
- Uncompleted Contracts Affidavit
- Certificate of Insurance Statement
- Collection of Use Tax on Sales to Local Governments Statement
- Time of Completion
- Disclosure of Investment Activities in Iran

STANDARD SPECIFICATION FORM - SS-1

STANDARD FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR AIA DOCUMENT A-101/2017

(Draft form until contract is awarded)

GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION AIA DOCUMENT A-201/2017

(Draft form until contract is awarded)

NEW JERSEY PREVAILING WAGE DETERMINATION DOCUMENTS

PROJECT TECHNICAL SPECIFICATIONS

APPENDICES TO TECHNICAL SPECIFICATIONS

APPENDIX 1 – INDOOR AIR QUALITY ASSESSMENT AND ASBESTOS CONTAINING MATERIALS REPORT
PREPARED BY ENVIRONMENTAL CONNECTION, INC.

APPENDIX 2 – BACKGROUND CHECK REQUIREMENTS

PROJECT DRAWINGS

**UNION COUNTY BOARD OF COUNTY COMMISSIONERS
INSTRUCTIONS TO BIDDERS AND FORMS**

DEFINITIONS

Wherever reference is made to the County, Title of Project, Bidder, or Vendor/Contractor they shall be as follows:

OWNER/COUNTY:

Union County Board of County Commissioners
UC Administration Building, 6th Floor
10 Elizabethtown Plaza
Elizabeth, New Jersey 07207

ADDRESS INQUIRIES TO:

Union County Division of Purchasing
UC Administration Building, 3rd Floor
10 Elizabethtown Plaza
Elizabeth, NJ 07207
Attn: Michelle Hagopian, Assistant Director, Division of Purchasing
Telephone: 908-527-4130
Facsimile: 908-558-2548
ucbids@ucnj.org

ADDRESS BIDS AND SUBMIT TO:

Union County Division of Purchasing
UC Administration Building, 3rd Floor
10 Elizabethtown Plaza
Elizabeth, NJ 07207
Attn: Michelle Hagopian, Assistant Director, Division of Purchasing
Telephone: 908-527-4130
Facsimile: 908-558-2548
ucbids@ucnj.org

TITLE OF PROJECT:

**Board of Elections Leak Repairs,
City of Elizabeth, County of Union,
New Jersey
BA#19-2021; Union County Engineering Project # 2019-024**

BIDDER: Bidder shall be a single overall contract bidder

ENGINEER: LCA Engineering, LLC

COUNTY ENGINEER AND/OR CONSTRUCTION MANAGER (as applicable):

COUNTY ENGINEER:

Thomas O. Mineo, P.E.
Union County
Division of Engineering

GENERAL SPECIFICATIONS

1. BID FORM

Bids for this Work will be enclosed in a sealed envelope addressed to the Purchasing Division, County of Union, New Jersey, Union County Administration Building, 10 Elizabethtown Plaza, Elizabeth, New Jersey 07207, with the full name of the Project clearly marked on the outside. Refer to the sheet marked "Notice of Bid (Advertisement)" for the correct name of the Project. Bidders must submit their bids on the attached pricing sheet (Bid Form), in a sealed envelope addressed to the County and bearing on the outside: the name of the Bidder, Bidder's business address, and the title of the Project.

The Division of Purchasing will receive the bids for this Work at the Union County Administration Building, 10 Elizabethtown Plaza, Elizabeth, New Jersey on the date and time noted on the sheet marked "**Notice of Bid (Advertisement)**".

The County will not assume responsibility for bids forwarded by mail. It is the individual's responsibility to see that the bids are presented to the Purchasing Division at the time and at the place designated.

Bids will be accepted only on the Bid Form supplied. Bids on forms other than the original supplied herein will be rejected. The "complete" Bid Documents includes the Bid Bond, Bid Form, Bidder's Checklist, Consent of Surety, Ownership Disclosure Certification, Non-Collusion Affidavit, and any other documents noted in these Instructions to Bidders or Contract Document to be submitted with this Bid.

The bidder will state in the bidding sheet the price per unit of measure for each scheduled Item of Work for which he will agree to carry out the Work, and the Total Bid Price for the construction of the Project.

The prices in the Bid Form shall be typed or written in pen and ink. Erasures or alterations must be initialed by the bidder in ink.

The bidding sheet for this Project may include a fixed amount as a Bid Allowance. If applicable, all bidders are required to add this fixed amount to their base bid and to include this additional amount in their Bid Bond. This sum will be included in the Contract as well as the performance, labor and materials bond. Payment by the County will be made to the Contractor from these funds only upon the completion of extra Work pursuant to a written Change Order(s) signed by the County's Engineer or his designee and the Contractor, prior to the commencement of such Work. Work commenced prior to written approval by the County shall be done at Contactor's risk. Such payment will only be in the amount agreed to by the parties, in writing in the Change Order(s). See Section 37, Change Orders, of these general specifications for further details.

Refer to Bid Document Submission Checklist for all required documents.

In the event there is a discrepancy between the unit price given and the extended total, the unit price will govern. Any discrepancies will be mathematically adjusted.

Insert applicable alternates, if any have been specified, applicable to the Bidder's Work. All alternates MUST be bid upon. Any Bidder's failure to do so will be deemed a material, non-waivable defect and shall render the bid nonresponsive. The Bidder shall clearly designate whether the change in price is an addition or subtraction, by using either a "+" sign or the word "addition", or in the alternative, a "-" sign or the word "minus". If there is no other change in price, the Bidder shall insert "NC" or "No Charge".

When two or more low bids are equal in all respects, awards will be made according to the provisions of N.J.S.A. 40A:11-6.1(d).

Where unit prices have already been established by the Contract Documents, the Bidder agrees that such unit prices shall prevail. All unit prices, whether filled in by the Bidder or established by the Contract Documents, shall become part of the Contract. No bid will be considered or award made, unless applicable unit prices, as required, are filled in.

The County reserves the right to reject any or all bids and also reserves the right to waive any minor informalities or non-material exceptions in the bids.

The County of Union has the right to reject any and all bids from any bidder that is in, or contemplates bankruptcy of any chapter of nature. Said bidder shall notify the County, in writing, of any condition or knowledge of the same.

Conditional bids will not be accepted. Bids may be withdrawn prior to the advertised time for the opening of bids or authorized postponement thereof or in accordance with the provisions of N.J.S.A. 40A:11-23.3 discussed below. Bids received after the advertised time shall not be considered. Bidders shall be solely responsible for premature opening or late delivery of bids not properly marked, addressed, or directed.

2. WITHDRAWAL OF BID DUE TO MISTAKE

N.J.S.A. 40A:11-23.3 authorizes a bidder to request withdrawal of a public works bid due to a mistake on the part of the bidder. A mistake is defined by N.J.S.A. 40A:11-2(42) as a clerical error that is an **unintentional and substantial computational error or an unintentional omission of a substantial quantity of labor, material, or both, from the final bid computation.**

A bidder claiming a mistake under N.J.S.A. 40A:11-23.3 must submit a request for withdrawal, **in writing**, by certified or registered mail to Michele Hagopian, Assistant Director, Division of Purchasing, County of Union, New Jersey, Union County

Administration Building, 10 Elizabethtown Plaza, Elizabeth, New Jersey 07207. The bidder must request withdrawal of a bid due to a mistake, as defined by the law, within five business days after the receipt and opening of the bids. Since the bid withdrawal request shall be effective as of the postmark of the certified or registered mailing, Michele Hagopian, Assistant Director of the Division of Purchasing or his designee may contact all bidders, after bids are opened, to ascertain if any bidders wish to, or already have exercised a request to withdraw their bid pursuant to N.J.S.A. 40A:11-23.3.

A bidder's request to withdraw the bid **shall** contain evidence, including any pertinent documents, demonstrating that a mistake was made. Such documents and relevant written information shall be reviewed and evaluated by the County's designated staff pursuant to the statutory criteria of N.J.S.A. 40A:11-23.3.

The County will not consider any written request for a bid withdrawal for a mistake, as defined by N.J.S.A. 40A:11-2(42), by a bidder in the preparation of a bid proposal unless the postmark of the certified or registered mailing is within the five business days following the opening of bids.

3. QUALIFICATIONS OF BIDDERS AND REQUIRED SUBMISSIONS

The County may make such investigation as it deems necessary to determine the ability of the Bidders to perform the Work, which includes investigation of any and all subcontractors listed with the bid. The Bidder shall furnish any information and data for this purpose as the County may request.

4. INTERPRETATIONS AND ADDENDA

Any explanation desired by a bidder regarding the meaning or interpretation of the Contract Documents must be requested in writing to the Assistant Director, Division of Purchasing at ucbids@ucnj.org with reasonable time allowed for a reply to reach bidders before submission of their bids. Any interpretation or instruction made by the County Engineer will be in the form of an addendum to the Contract Documents or clarification and will be furnished to all prospective bidders. Oral explanations or instructions given before the award of the Contract will not be binding. Bidders are required to bring to the attention of the Assistant Director, Division of Purchasing at ucbids@ucnj.org, the discovery of any apparent ambiguity, inconsistency, error, discrepancy, omission in the Contract Documents for interpretation and correction at least ten (10) working days before opening of bids with the exception of Saturdays, Sundays and holidays.

All Addenda issued through the Office of the Division of Purchasing are amendments to the Contract Documents and shall be considered in preparing bids. Same shall become part of the Contract Documents.

Addenda take precedence over all earlier documents and over each other according to the latest date. Addenda unless themselves interpretive remain subject to interpretation the same as any other document incorporated in the Contract.

Addenda may be issued by the Assistant Director, Division of Purchasing up to seven (7) working days prior to the opening of bids. Failure of any bidder to receive an addendum shall not relieve such bidder from the obligation imposed by such addendum. Bidders are to keep themselves currently acquainted with the Contract Documents during the entire bidding period and make inquiry on their own initiative as to issuance of any Addenda. Receipts of all Addenda shall be acknowledged on the "*Acknowledgement of Receipt of Changes*" included in the bid package and must be submitted with the bid.

5. OBLIGATION OF BIDDER TO INSPECT SITE AND CONTRACT DOCUMENTS

At the time of the opening of bids, each Bidder will be presumed to have inspected the site(s) and to have read, and be thoroughly familiar with the Contract Documents. The failure or neglect of any Bidder to receive or examine any form, instrument, or document shall in no way relieve any Bidder from any obligation in respect to its bid.

The Bidder shall examine the contents of the Project Manual and the set of Drawings and assure itself that all pages of the Specifications, Drawings, and other Contract Documents are included in the documents obtained for bidding purposes. Should the Specifications, Drawings, and other Contract Documents be incomplete, the Bidder shall notify the County Engineer in writing, who will supply the Bidder with any missing pages of Specifications, Drawings, or other Contract Documents. The lack of such written notification by the Bidder will be construed as evidence that the Specifications, Drawings, or other Contract Documents supplied it for bidding purposes are full and complete and as a waiver of any subsequent claim to the contrary.

6. BID AND PERFORMANCE GUARANTEE

Each bidder must furnish a Bid Bond, Certified Check or Bank Cashier's Check in the amount of ten percent (10%) of the Bid. Checks shall be drawn to the order of the County of Union, New Jersey, not to exceed \$20,000.

Each bidder must furnish with the bid a certificate from a Surety Company, i.e. Consent of Surety, stating that in the event of the contract being awarded to said bidder, such Surety Company will provide the Contractor with bonds guaranteeing the faithful performance of the Work in accordance with the plans and specifications, and the payment for labor, materials, and all other indebtedness which may accrue on the account of this Work. A Performance, Labor and Materials Bond will be furnished by the Contractor upon an award of Contract, and will be in the amount of 100% of the contract price.

A one-year Maintenance Bond will be required upon acceptance of the Project by the County in the amount as stated in Section 15 of the General Specifications. Bonds will be written by a firm authorized to issue the bonds under the laws of the State of New Jersey and be in a form acceptable to the County Counsel.

N.J.S.A. 40A:11-1 et seq. allows the prime Contractor to furnish the Performance Security for his Subcontractors. The County of Union requires Performance Security to be furnished by the prime contractor for the entire job in the total amount of the contract.

The County will return all certified checks or cashier's checks after the proposals have been opened, tabulated and reviewed except those of the three (3) bidders lowest responsible bidders. The County will return the checks of these bidders when a contract is awarded to the successful bidder within ten (10) days after the award of the contract.

If the successful bidder refuses or neglects to sign an agreement and furnish the required bonds, the Bid Bond will be held and used by the County to offset any damages for such refusal or neglect.

7. COMMENCEMENT AND COMPLETION

Work will not commence until a Notice to Proceed is received from the County Engineer.

Upon substantial completion of the Project, the Contractor must request a joint inspection with the County Engineer. Upon completion of this inspection, the County Engineer will prepare a list of incomplete or incorrect items (punch list) and have Contractor initial and date same. The Contractor shall rectify all deficiencies noted on the punch list within 30 calendar days of receipt of the list. The County Engineer may approve extensions for extenuating circumstances.

8. BIDDER AFFIDAVIT

All Bidders are required to complete, sign, and submit with their Bid, the attached "Affidavit Regarding List of Debarred, Suspended or Disqualified Bidders". (See form enclosed)

9. LABOR AND MATERIALS

The prices will cover all costs of any nature incident to and growing out of the Work, including all labor, material, equipment, transportation, loss by damage or destruction of the Project, settlement of damages, and for replacement of defective work or materials. *N.J.S.A. 54:32B-1 et seq.* exempts all materials sold to the County of Union from sales or use taxes and should not be included in the prices provided on the Bidding Sheet.

11. INSURANCE REQUIREMENTS

The County of Union requires all contractors to be able to comply with the following insurance requirements. In the event a bid is accepted by the County, the contractor must accept the applicable insurance requirements, as set forth below, as part of any contract awarded to it by the County.

Contractor shall carry and maintain at all times while the contract is in full force and effect, the following insurance coverage with an insurance company or companies acceptable to the County, with limits not less than those shown below. A Certificate of Insurance shall be filed with the County prior to commencement of any Work indicating the following:

- a) Commercial General Liability (CGL): Coverage for all operations including, but not limited to, contractual, products and completed operations, and personal injury with limits no less than \$5,000,000 per occurrence/\$10,000,000 aggregate. The County of Union, its Board of County Commissioners, officers, employees, agents and servants shall be included as an additional insured. Coverage is provided on a primary and non-contributory basis to the County of Union, et al.
- b) Automobile Liability: Coverage for all owned, non-owned and hired vehicles with limits not less than \$5,000,000 per occurrence, combined single limits (CSL) or its equivalent.
- c) Workers Compensation: As required by the State of New Jersey and Employers Liability with limits not less than \$1,000,000 per accident for bodily injury or disease.
- d) Professional Liability (if design/build): Coverage with limits not less than \$1,000,000 per occurrence or claim, \$2,000,000 aggregate
- e) Contractor's Pollution Legal Liability and/or Asbestos Legal Liability and/or Errors & Omissions (if project involves environmental hazards): Coverage with limits no less than \$1,000,000 per occurrence or claim/\$2,000,000 aggregate.
- f) Builders Risk (for major renovations): During the course of construction utilizing an "All Risk" coverage form with limits equal to the completed value of the project and no coinsurance penalty provisions.

Where applicable, a waiver of subrogation in favor of the County of Union, its Board of County Commissioners, officers, employees, agents, servants and the State of New Jersey is to be included in those policies of insurance where permitted by law.

Notice of Cancellation: Each insurance policy required above shall provide that coverage shall not be canceled, except with notice to the Entity.

Special Risks or Circumstances: The County reserves the right to modify these requirements, including limits, based on the nature of the risk, prior experience, insurer, coverage, or other special circumstances.

12. INDEMNIFICATION REQUIREMENTS

The County of Union requires all bidders to accept the following indemnification requirements in the event the County accepts their bid. The Contract awarded by the County to the successful bidder will contain the following provision:

“To the fullest extent permitted by law the Contractor shall indemnify and hold harmless the owner and the owner’s consultants, agents, representatives, and employees from and against any and all claims, damages, losses, costs, and expenses, including, but not limited to attorneys’ fees, legal costs and legal expenses arising out of or resulting from the performance of the Contractor’s work under this contract, provided that such claim, damage, loss, cost, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the work itself) caused or alleged to be caused by the negligent acts, negligent omissions, and/or fault of the Contractor, anyone directly or indirectly employed or retained by the Contractor, or anyone for whose acts the Contractor may be liable regardless of whether caused in part by the negligent act or omission of a party indemnified hereunder provided it is not caused by the sole negligence of a party indemnified hereunder. Contractor shall further indemnify and hold harmless the County and the County’s consultants, agents, representative, and employees from and against any and all claims, damages, losses, costs, and expenses, including, but not limited to attorneys’ fees, legal costs and legal expenses, arising out of or resulting from performance of the work, provided that such claim, damage, loss, cost, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the work itself) caused or alleged to be caused by the negligent acts, negligent omissions, and/or fault of the County or the County’s consultants, agents, representatives, or employees and arises out of this project and provided such claim, damage, loss, cost, or expense is not caused by the sole negligence of a party indemnified hereunder.”

13. ROYALTIES AND PATENTS

The Contractor shall pay all royalties and license fees. He shall defend all suits or claims for infringement of any patent rights and shall hold the County harmless from loss on account thereof.

14. PLANS AND SPECIFICATIONS

In carrying out the Work, the plan(s) and the specifications will be followed by the Contractor. Minor alterations in the plan may be made or permitted by the County Engineer from time to time and, if no additional Work is necessary, there will be no additional charge for carrying out such minor alterations.

The Contractor shall provide the County Engineer a set of reproducible as-built drawings upon completion of the Project. The Contractor shall maintain an updated construction progress plan in the Project field office at all times.

When applicable, The New Jersey Department of Transportation Standard Specifications for Road and Bridge Construction, as amended, and Supplemental Specifications for State Aid Projects, herein after referred to as the "Standard Specifications", are made a part of these specifications and contract for the improvements, and will govern the construction of this Project, the material used and the execution of this Project, except as revised and modified herein. The references to these specifications are given herein for the purpose of aiding in the rapid location of the description of the various items herein specified. The entire Work must be carried on and completed to the satisfaction of the County. The Standard Specifications are amended as follows:

"Any reference to the Commissioner, Department, Department Laboratory, Engineer or Inspector should be redefined to be the County of Union".

15. GUARANTEE AGAINST DEFECTIVE WORK

Prior to final payment being made or before the release of the performance security required by Section 3 above, the Contractor and Surety shall execute and deliver to the County an original Maintenance Bond with an original signature and seal having a penal sum equal to:

- A) One hundred percent (100%) of the final adjusted Contract amount, if such amount is \$50,000.00 or less;
- B) Fifty percent (50%) of the final adjusted Contract amount, if such amount be greater than \$50,000.00 but less than \$250,000.00; and,
- C) Twenty-five percent (25%) of the final adjusted contract amount, if such amount is \$250,000.00 or more.

The Bond and Surety shall be satisfactory to the Union County Counsel. The Surety shall hold a Certificate of Authorization to do business in the State of New Jersey and shall conform to P.L. 1995 c.384, codified as N.J.S.A. 2A:44-143, 144. The Surety Disclosure Statement and Certification required by N.J.S.A. 2A: 44-143, 144, shall be attached to the Bond. Such Maintenance Bond shall remain in full force and effect for a period of one (1) year from the date of Final Completion. Such Maintenance Bond shall also provide that the Contractor and the Surety guarantee to replace for the said period

of one (1) year from the date of Final Completion, all Work performed and/or all materials furnished that were not performed or were not furnished in accordance 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. If, during that period, any part of the Project, in the judgment of the Engineer, is found defective, the Contractor will repair or replace same within five (5) days of receipt of notice from the County Engineer. If the Contractor refuses or neglects to do such Work in the time specified, the County Engineer may have the Work done by others and the Contractor or his Surety thereof will pay the cost.

The Contractor will furnish the County a Maintenance Bond for a percentage of the final adjusted contract price, as stated above. The one (1) year period will start the day of Final Completion of Project by the County. Final payment is conditional on the receipt of a maintenance bond in a form acceptable to County Counsel.

16. TRAFFIC AND STREET MAINTENANCE

The Work must be started and performed by the Contractor in such a manner as to minimize delays to the traveling public. It must be completed in a timely fashion, with little or no inconvenience to traffic and pedestrians, where such inconvenience may be avoided.

All municipal, county, and state roadways shall remain open to traffic unless otherwise provided for in the technical specifications.

If modified traffic patterns are authorized in order to provide a safe working or traveling environment, the Contractor is responsible for providing all equipment, barrels, cones, signs, and barricades to implement the work zone and detours, unless otherwise specified in the technical specifications. All work zones and detours shall be established in accordance with the technical plans and specifications if provided or in strict compliance with the current version of the Manual for Uniform Traffic Control Devices (MUTCD). The Contractor shall obtain approval for these work zones and detour plans from the Municipal Police or applicable police agency and the Union County Bureau of Traffic Maintenance prior to implementation.

All traffic control plans shall provide for safe movement of vehicular, bicycle, and pedestrian traffic. Particular attention shall be given to requirements of the Americans with Disabilities Act.

No portion of any street or alleyway may be used for the storage of any materials or equipment without the approval of the Municipal Police or other applicable police agency. Sidewalks, gutters, drains, fire hydrants and private drives shall be maintained for their intended use unless specifically approved by the County Engineer.

Upon suspension of Work, at the end of the day or for protracted periods, the Contractor shall remove all rubbish and materials from the Work site to the approved storage/staging location. All road cuts, saw cuts, and trenches that may pose hazard to vehicular, pedestrian, or bicycle traffic, to include handicapped users, shall be filled to the surface of the roadway or sidewalk. At no time will steel plates or settled trenches be allowed at the daily suspension of Work, unless specifically approved by the County Engineer.

Use of Traffic Control Officers shall be determined by the County in accordance with the provisions of N.J.S.A. 40A:11-23.1(c). If applicable to the Project, the County shall have provided an allowance for same as set forth in the Bid Form.

With respect to pedestrian traffic, the Contractor shall install signs restricting access of the general public and, as necessary, Union County employees to the area of construction. The Contractor shall provide safe access to required areas and place physical barriers to restricted areas. These barriers may range from caution tape to actual barriers, at the direction of the County Engineer.

17. CONTRACTOR'S EMPLOYEES

The Contractor must employ only suitable and competent labor in the Work, and must remove from the Work any incompetent, unsuitable, or disorderly person upon complaint from the County Engineer.

The parties to any contract resulting from this proposal do hereby agree that the provisions of N.J.S.A. 10:2-1 through 10:2-4 (discrimination in employment on public works contracts): 34:11-56.25 et seq. (payment of prevailing rate of wages determined pursuant to N.J.S.A. 34:11-56.30 by the Commissioner), and the Rules and Regulations promulgated pursuant thereto, are hereby made a part of any contract and are binding upon them.

There will be no discrimination against any employee who is employed in the Work to be covered by any contract resulting from this bid because of age, race, creed, color, national origin, ancestry, marital status or sex.

Any person, firm, or corporation violating the provisions of this Section will be deemed and judged a disorderly person.

18. OWNERSHIP DISCLOSURES REQUIRED

Pursuant to P.L. 2016, c. 43, codified as N.J.S.A. 52:25-24.2, no corporation, partnership, or limited liability company shall be awarded any contract nor shall any agreement be entered into for the performance of any work or the furnishing of any materials or supplies the County unless prior to the receipt of the bid or accompanying

the bid, of said corporation, said partnership, or said limited liability company there is submitted a statement setting forth the names and addresses of all stockholders in the corporation who own ten percent (10%) or more of its stock, of any class, or of all individual partners in the partnership who own a ten percent (10%) or greater interest therein, or of all members in the limited liability company who own a ten percent (10%) or greater interest therein, as the case may be. If one or more such stockholder or partner or member is itself a corporation or partnership or limited liability company, the stockholders holding ten percent (10%) or more of that corporation's stock, or the individual partners owning ten percent (10%) or greater interest in that partnership, or the members owning ten percent (10%) or greater interest in that limited liability company, as the case may be, shall also be listed. The disclosure shall be continued until names and addresses of every non corporate stockholder, and individual partner, and member, exceeding the ten percent (10%) ownership criteria has been listed.

To comply with this section, a bidder with any direct or indirect parent entity which is publicly traded may submit the name and address of each publicly traded entity and the name and address of each person that holds a ten percent (10%) or greater beneficial interest in the publicly traded entity as of the last annual filing with the federal Securities and Exchange Commission ("SEC") or the foreign equivalent, and, if there is any person that holds a ten percent (10%) or greater beneficial interest, also shall submit links to the websites containing the last annual filings with the federal SEC or the foreign equivalent and the relevant page numbers of the filings that contain the information on each person that holds a ten percent (10%) or greater beneficial interest.

(See forms attached)

19. NON-COLLUSION AFFIDAVIT

The Bidder shall submit with its bid either the attached completed "Non-Collusion Affidavit" or a statement of non-collusion with verbiage similar to same.

20. EQUAL EMPLOYMENT OPPORTUNITY COMPLIANCES

The successful bidder shall be required to complete and submit an Initial Project Workforce Report, New Jersey Department of Treasury Form AA-201, upon notification of award. Failure to submit this completed form may result in the Contract being terminated.

The successful bidder shall also be required to submit a copy of its Monthly Project Workforce Report, New Jersey Department of Treasury Form AA-202, to the New Jersey Department of Treasury's Division of Public Contracts Equal Employment Opportunity Compliance and to the Board.

21. COMPLIANCE WITH NEW JERSEY PREVAILING WAGE ACT

The County of Union, in order to fulfill the requirements of N.J.S.A. 34:11-56.25 et seq, requires that the following additional conditions be strictly followed. The bidders represent that he is not listed or is not on record in the Office of the Commissioner or the Department of Labor and Workforce Development as one who failed to pay prevailing wages in accordance with the provisions of this Act. The bidder agrees to the inclusion of a contract provision upon award which specifically requires said Contractor to fully comply with each and all of the requirements of the aforesaid Act as it relates to prevailing rates of wages on public contracts as set forth in the New Jersey Prevailing Wage Act, P.L. 1963, Chapter 150 and P.L. 1974, Chapter 64.

A Copy of the Prevailing Wage Rates is attached for your reference. Applicable rates are those wages and fringe benefit rates in effect on the date the contract is awarded. All predetermined rate increases listed at the time the contract award must also be paid, beginning on the dates specified. Rates may change between the time of issuance of this determination and the award of the public works contract. Therefore, prior to the award of the contract, verification must be made with the Public Contracts section, to insure that the rates contained in this determination are still prevailing.

The Contractor agrees to abide and be bound by each and all of the said statutory provisions with respect to the payment of prevailing rates of wages, and acknowledges that the County reserves the right to terminate the Contractor's (or his subcontractors') right to proceed with the scope of Work, or such portion thereof that relates to the failure to pay prevailing rates of wages. In such event or under the terms of N.J.S.A. 34:11-56.27, the Contractor and his surety will be liable to the County of Union for any excess costs occasioned by such a violation.

The Contractor or subcontractors for this Project will post the Prevailing Wage Rates for each craft and classification involved as determined by the Commissioner of Labor and Industry, including the effective date of any changes thereof, in prominent and easily accessible places at the site of the Work or at such place or places as are used by them to pay workmen their wages.

The County of Union requires a copy of payroll records from the Contractor and subcontractors. Payroll records shall be submitted with each voucher request for payment. Prevailing wage rates may be obtained from the New Jersey Labor, Division of Workplace Standards, Public Contracts Section, (609-292-2259).

In addition to compliance with the New Jersey Prevailing Wage Act, the County requires compliance with procedures established by Resolution No. 2014-0408 adopted by the Union County Board of County Commissioners on May 8, 2014. The resolution is furnished in Section 51 of these General Specifications.

UNION LABOR IS PREFERRED ON ALL COUNTY WORK

The foregoing reference to specific laws will not be deemed to be a limitation of obligation of the Contractor to perform his obligations in full compliance with the provisions and requirements of all federal and state statutes and local ordinances applicable to the Work to be done under the contract.

It is agreed and understood that any contracts and/or orders placed as a result of this proposal will be governed and construed and the rights and obligations of the parties hereto will be determined in accordance with the laws of the State of New Jersey.

Upon completion of the Work, the Contractor will furnish a Certification of Compliance with the New Jersey Prevailing Wage Act. The certificate in a form acceptable to County Counsel is a condition of the final payment. (See form attached)

22. BRAND NAME OR EQUAL

When the Specifications, Forms, and other Contract Documents use “brand name or equivalent” or similar language, the listed brand name shall serve as a reference or point of comparison for the functional or operational characteristic desired for the goods or services being requested. Where a bidder attempts to submit an equivalent product for a brand name, it shall be the responsibility of the bidder to fully describe and document the product to be provided with the bid in order to establish the equivalence claim.

- A. If the Bidder proposes to offer substitute goods as an equal to those specified herein, the bidder shall so indicate with the Bid Proposal. For the purposes of this paragraph, a proposed item shall be considered equal to goods specified herein if:
 - 1. The County, in its sole discretion, determines that: (i) the goods conform substantially, even with deviations, to the brand name goods specified herein; (ii) the goods are equal to or greater than the brand name goods specified herein in terms of quality, durability, functionality, appearance, strength and design; (iii) the goods are capable, at least as well as the brand name goods specified herein, or performing with existing equipment; and (iv) the goods do not cost the County more than the brand name goods specified herein costs the County.
- B. To offer substitute goods as an equal to those specified herein, it is necessary that:

1. The Bidder submits sufficient information with its bid to permit the County to determine that the goods are equivalent to the brand name goods specified herein, including, but not necessarily limited to the brand, catalog number and specifications/data sheets;
 2. The Bidder fully identifies and describes the variations of the goods from the brand name goods specified herein on a separate sheet that is to be submitted with the bid proposal. Bidder's literature WILL NOT suffice in explaining exceptions to these specifications.
 3. The Bidder certifies that the goods (i) are similar in substance to the brand name goods specified, and (ii) are suited to the same use as the item specified;
- C. The County shall be allowed a reasonable time within which to evaluate the Bidder's proposal to offer substitute goods as an equal to those specified herein. The County shall be the sole judge of acceptability. No "or-equal" goods shall be ordered, delivered, assembled, set-up or utilized until the County's evaluation is complete. The County's determination as to equivalency shall be deemed final and absolute.

In the event the Bidder does not provide sufficient supporting documentation with the bid, it will be presumed and required that the brand name goods and services as described in the specifications will be provided.

23. LINES AND GRADES

Normally, horizontal and vertical control points will be provided in the technical specifications. All other surveying will be the responsibility of the Contractor unless otherwise noted.

24. NUMBER OF WORKING DAYS

In accordance with N.J.S.A. 40A:11-17, the Work for the within Project shall be completed as specified on the Time of Completion Form. See form attached

There shall be taken a deduction from the contract price, or any wages paid by the County, to any inspector(s) necessarily employed by it on the Work, for any number of days in excess of the number allowed in the specifications.

25. PROMPT PAYMENT OF CONSTRUCTION CONTRACTS (NJ Prompt Payment Act)

Pursuant to N.J.S.A. 2A:30A-1 et seq., payment to the Contractor, other than for Work done pursuant to a contact allowance, where applicable, shall be processed and paid as follows:

1. All contractor bills shall be either approved for payment, or notice provided as to why the bill or any portion of it will not be approved by the representative(s) of the governing body no later than the public meeting following 20 calendar days of the billing date as defined in the statute.
2. If the billing is approved, said bill shall be paid in the payment cycle following the meeting.

26. STOPPING WORK ON ACCOUNT OF BAD WEATHER

Work must only be performed in weather suitable for the type of construction planned or underway. Extremes in temperature, humidity, precipitation, evaporation, etc. can detrimentally affect the constructed product. Refer to the Standard and Technical Specifications for specific items.

27. ACCESS FOR OTHER CONTRACTORS

The Contractor for this Work will give proper access to other contractors who may be employed upon the Project and must not hinder or delay unnecessarily any Work that may be progressing under other contracts.

28. CONDEMNED MATERIALS AND WORK

Any materials and or part of the Work that may be condemned by the County Engineer will be removed and replaced by the Contractor or otherwise rectified, as may be directed by the County Engineer. No payment will be made upon the Work until such faulty work has been made good as may be directed. In the event the Contractor refuses or neglects to make good such faulty work, he will be deemed to have abandoned the contract and proceedings may be taken against him as provided herein.

29. STORAGE

In the event that it is necessary for the Contractor to stockpile or store materials or equipment on the job site, the Contractor shall inform the County of such necessity and the County may offer available space, if any, for storage of such materials or equipment. The Contractor shall use said space only for such purpose. Any and all materials which may be stored in such space or which may be brought onto the job site at any time by the Contractor will be at the Contractor's sole risk. The County will not be responsible for

loss of or damage to said materials or equipment for any cause whatsoever. The Contractor shall take necessary measures to protect any such storage area and shall be responsible for any and all damages.

30. FINAL CLEAN UP

Upon completion of the Work, the Contractor will remove all equipment, unused materials, rubbish, etc., and will repair, or replace in an a manner acceptable to the County Engineer, all areas that may have been damaged in the prosecution of the Work. Same shall be a condition precedent to final payment. Should said Contractor fail to comply with this requirement, the County shall undertake the clean-up with its own forces and charge the cost of same against the Contractor's contract balance.

31. SUB-LETTING OF WORK

Except for the List of Subcontractors, pursuant to N.J.S.A. 40A:11-16 (See form attached), no portion of the Work will be sublet by the Contractor to any other entities, except with the consent of the County Engineer. A complete list of subcontractors must be submitted to the County Engineer at the preconstruction meeting. If the job does not warrant a preconstruction meeting, the Contractor must submit such list prior to the start of Work.

All Subcontractors will be subject to N.J.S.A. 34:11-56 et al.

N.J.S.A. 40A:11-16 requires the bidder to list in the bid sheets the name or names of all subcontractors involved in the following types of Work: plumbing and gas fitting and all kindred work, steam and hot water heating, ventilating apparatus, steam power plants and kindred work, electrical work, ornamental iron work, and structural steel. In addition, the County may require the identification of specific additional subcontractors. If these trades are expected to be part of the contract, such subcontractors should be listed on the "Subcontractor Identification Statement List of Subcontractors" and Bidder shall certify same on the accompanying sheet titled "Subcontractor Identification Certification". (See forms attached) **Bidder's failure to submit these two forms shall be considered a material defect and result in rejection of Bidder's bid.** Substitutions of any listed subcontractors pursuant to N.J.S.A. 40A:11-16 will not be permitted except with the consent of the County Engineer.

32. SAFETY

The Contractor shall observe all rules and regulations of the Federal, State, and local health officials. Attention is directed to Federal, State, and local laws, rules, and regulations concerning construction safety and health standards. The Contractor shall not require any worker to work in surroundings or under conditions that are unsanitary, hazardous, or dangerous to the worker's health or safety.

The Contractor shall admit to the site, without delay and without the presentation of an inspection warrant, any inspector of OSHA or other legally responsible agency involved in safety and health administration upon presentation of proper credentials.

The Contractor shall make available to the Contractor's employees, subcontractors, the County Engineer, and the public, all information pursuant to OSHA 29 CFR Part 1926.59 of The Hazard Communication Standard 29 CFR 1910.1200, and shall also maintain a file on each job site containing all Material Safety Data Sheets (MSDS) for products in use at the Project. These Material Safety Data Sheets shall be made available to the Engineer upon request.

The Contractor shall at all times conduct the Work to provide for the safety and convenience of the general public and protection of persons and property. The safety provisions of applicable laws, OSHA regulations, building and construction codes, and the rules and regulations of the New Jersey Department of Labor and Workforce Development shall be observed.

33. QUALITY, SAFETY AND PERFORMANCE STANDARDS

All goods and services must be constructed and provided with the highest quality materials and workmanship. It is the intent of these specifications that only equipment equal to, or exceeding, the standard specified will be acceptable in order to protect the safety of the occupants of the Building.

34. MATTERS NOT MENTIONED IN CONTRACT DOCUMENTS

Any Work, material, or method, not specifically described in these specifications, but shown upon the plans of the Work, will be carried out as shown on said plan.

35. PERMITS

The Contractor will obtain all necessary permits required by law and provide the County with necessary approvals prior to commencement of permitted Work.

36. CONTRACTOR TO PROVIDE PROOF OF PAYMENT

Upon the completion of the Work, the Contractor will furnish a General Release as proof that all claims for labor, materials, etc., have been settled by the Contractor. The General Release, in a form acceptable to County Counsel, is a condition of final payment.

37. CHANGE ORDERS

The applicability of change orders and change order procedures shall comply with *N.J.S.A. 40A:11-16.7* and *N.J.A.C. 5:30-11.1 et seq.*, "Change Orders and Open End Contracts".

38. SUPPLEMENTAL WORK

In case any supplemental work is necessary, it will be performed by the Contractor at a price fixed by agreement between the Contractor and the County Engineer and approved by the County as specified in Section 36. The Contractor will do no supplemental work on any character, for which the Contractor will demand pay, except upon the written order of the County.

39. FORM OF CONTRACT

The Contract will be subject to all statutory provisions on the matter of Public Works, Public Contracts, The Law Against Discrimination, the Laws Governing Affirmative Action and Prevailing Rates of Wages under the laws of New Jersey.

The Agreements shall be executed by both parties not later than twenty-one (21) days from the date of the award by the County (Sundays and holidays excluded); however, such time frame may be extended by agreement of the parties.

40. PROGRESS PAYMENTS

Monthly progress payments will be made based on the value of labor and materials incorporated in the Work and of materials suitably stored at the site. An itemized schedule of values shall be submitted with each Application for Payment.

(Refer to the Owner/Contractor Agreement for Retainage and other conditions pertaining to payment and the application of N.J.S.A. 2A:30A-1 et seq.)

All Applications for Payment shall be accompanied by paid invoices for materials incorporated in the Work and for materials suitably stored at the site, and affidavit(s) by Subcontractors whose Work was included in the next to the last application to the effect such Work and such materials have been paid for.

No payment shall be made without Contractor having provided all submittals set forth in this Section, and the approval of same by the County.

For contracts exceeding \$100,000.00, monthly payments will be made on the Work to the extent of 98% of the value of the Work done which is considered to be retainage.

For contracts less than \$100,000.00, monthly payments will be on the Work to the extent of 90% of the value of the Work done. In lieu of the retainage, the Contractor will, at his option, deposit with the County Counsel negotiable bearer bonds of the State of New Jersey or any political subdivision thereof, equal to the amount otherwise withheld as retainage.

When the Project is completed, the final cost of the Project will be based on actual quantities of authorized Work done under each item scheduled in the bidding sheet and approved Change Orders, if any. The money due to the Contractor as determined by said final certificate after deduction of previous monthly payments on account, will be paid to the Contractor in accordance with the terms of the contract dealing with Prompt Payment, providing, however that before such final payment is made, all outstanding claims against the Contractor must be satisfied. Before final payment is released, the Contractor must furnish: **a)** Maintenance Bond (see Section 6 of these general specifications); **b)** Certification of Compliance, New Jersey Prevailing Wage Act (see Sections 21 and 51); and **c)** General Release (see Section 36) in a form satisfactory to County Counsel; **d)** complete set of as-built plans in the latest AutoCad on compact disc; and **e)** a complete set of in-progress photos in jpg, jpeg, or bmp digital format on a compact disc.

41. INSPECTION

The Work must be done in accordance with the plans and specifications, and will be inspected by the County Engineer. An inspector may be placed upon the Work at any time by the County Engineer to see that the plans, specifications, and instructions of the County Engineer are carried out. In connection herewith, bidders are referred to N.J.S.A. 40A:11-17.

42. DAMAGES

The Contractor will be held responsible for all damages that may occur to Work, or to persons or property by reason of the nature of the Work or from the elements, or by reason of inadequate protection of the Work, or from any carelessness or negligence on his part or on the part of his employees. The County will withhold payments on the Work until all suits or claims for damages sustained on, or by reason of, this Work will have been settled by the Contractor.

The construction and final completion of this Work will be guaranteed by the Contractor. Any damages that may be done to the Work or any part thereof, by the elements or otherwise, during its construction, will be made good by the Contractor.

43. LIQUIDATED DAMAGES

If the Project is not completed within the time specified herein or within such further time as may have been granted by the County Engineer, then the Contractor hereby agrees to pay to the County as liquidated damages, but not as a penalty, \$1,000.00 per day for each and every calendar day that he is in default on time to complete the Work. The said sum will be deducted from moneys due the Contractor and if the damages exceed this amount, then the Contractor or his Surety Company will pay the excess. These damages may be waived at the option of the County.

44. AFFIRMATIVE ACTION REQUIREMENTS

EXHIBIT B (Revised 4/10)

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

CONSTRUCTION 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 ensure that equal employment opportunity is afforded to such applicants in recruitment and employment, 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 equal employment opportunity shall include, but not be limited to the following: employment, up-grading, 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 will send to each labor union, with which it has a collective bargaining agreement, 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.

When hiring or scheduling workers in each construction trade, the contractor or subcontractor agrees to make good faith efforts to employ minority and women workers in each construction trade consistent with the targeted employment goal prescribed by N.J.A.C. 17:27-7.2; provided, however, that the Division may, in its discretion, exempt a contractor or subcontractor from

compliance with the good faith procedures prescribed by the following provisions, A, B and C, as long as the Division is satisfied that the contractor or subcontractor is employing workers provided by a union which provides evidence, in accordance with standards prescribed by the Division, that its percentage of active "card carrying" members who are minority and women workers is equal to or greater than the targeted employment goal established in accordance with N.J.A.C. 17:27-7.2. The contractor or subcontractor agrees that a good faith effort shall include compliance with the following procedures:

(A) If the contractor or subcontractor has a referral agreement or arrangement with a union for a construction trade, the contractor or subcontractor shall, within three business days of the contract award, seek assurances from the union that it will cooperate with the contractor or subcontractor as it fulfills its affirmative action obligations under this contract and in accordance with the rules promulgated by the Treasurer pursuant to N.J.S.A. 10:5-31 et. seq., as supplemented and amended from time to time and the Americans with Disabilities Act. If the contractor or subcontractor is unable to obtain said assurances from the construction trade union at least five business days prior to the commencement of construction work, the contractor or subcontractor agrees to afford equal employment opportunities minority and women workers directly, consistent with this chapter. If the contractor's or subcontractor's prior experience with a construction trade union, regardless of whether the union has provided said assurances, indicates a significant possibility that the trade union will not refer sufficient minority and women workers consistent with affording equal employment opportunities as specified in this chapter, the contractor or subcontractor agrees to be prepared to provide such opportunities to minority and women workers directly, consistent with this chapter, by complying with the hiring or scheduling procedures prescribed under (B) below; and the contractor or subcontractor further agrees to take said action immediately if it determines that the union is not referring minority and women workers consistent with the equal employment opportunity goals set forth in this chapter.

(B) If good faith efforts to meet targeted employment goals have not or cannot be met for each construction trade by adhering to the procedures of (A) above, or if the contractor does not have a referral agreement or arrangement with a union for a construction trade, the contractor or subcontractor agrees to take the following actions:

(1) To notify the public agency compliance officer, the Division, and minority and women referral organizations listed by the Division pursuant to N.J.A.C. 17:27-5.3, of its workforce needs, and request referral of minority and women workers;

(2) To notify any minority and women workers who have been listed with it as awaiting available vacancies;

(3) Prior to commencement of work, to request that the local construction trade union refer minority and women workers to fill job openings, provided the contractor or subcontractor has a referral agreement or arrangement with a union for the construction trade;

(4) To leave standing requests for additional referral to minority and women workers with the local construction trade union, provided the contractor or subcontractor has a referral agreement or arrangement with a union for the construction trade, the State Training and Employment Service and other approved referral sources in the area;

(5) If it is necessary to lay off some of the workers in a given trade on the construction site, layoffs shall be conducted in compliance with the equal employment opportunity and non-discrimination standards set forth in this regulation, as well as with applicable Federal and State court decisions;

(6) To adhere to the following procedure when minority and women workers apply or are referred to the contractor or subcontractor:

(i) The contractor or subcontractor shall interview the referred minority or women worker.

(ii) If said individuals have never previously received any document or certification signifying a level of qualification lower than that required in order to perform the work of the construction trade, the contractor or subcontractor shall in good faith determine the qualifications of such individuals. The contractor or subcontractor shall hire or schedule those individuals who satisfy appropriate qualification standards in conformity with the equal employment opportunity and non-discrimination principles set forth in this chapter. However, a contractor or subcontractor shall determine that the individual at least possesses the requisite skills, and experience recognized by a union, apprentice program or a referral agency, provided the referral agency is acceptable to the Division. If necessary, the contractor or subcontractor shall hire or schedule minority and women workers who qualify as trainees pursuant to these rules. All of the requirements, however, are limited by the provisions of (C) below.

(iii) The name of any interested women or minority individual shall be maintained on a waiting list, and shall be considered for employment as described in (i) above, whenever vacancies occur. At the request of the Division, the contractor or subcontractor shall provide evidence of its good faith efforts to employ women and minorities from the list to fill vacancies.

(iv) If, for any reason, said contractor or subcontractor determines that a minority individual or a woman is not qualified or if the individual qualifies as an advanced trainee or apprentice, the contractor or subcontractor shall inform the individual in writing of the reasons for the determination, maintain a copy of the determination in its files, and send a copy to the public agency compliance officer and to the Division.

(7) To keep a complete and accurate record of all requests made for the referral of workers in any trade covered by the contract, on forms made available by the Division and submitted promptly to the Division upon request.

(C) The contractor or subcontractor agrees that nothing contained in (B) above shall preclude the contractor or subcontractor from complying with the union hiring hall or apprenticeship policies in any applicable collective bargaining agreement or union hiring hall arrangement, and, where required by custom or agreement, it shall send journeymen and trainees to the union for referral, or to the apprenticeship program for admission, pursuant to such agreement or arrangement. However, where the practices of a union or apprenticeship program will result in the exclusion of minorities and women or the failure to refer minorities and women consistent with the targeted county employment goal, the contractor or subcontractor shall consider for employment persons referred pursuant to (B) above without regard to such agreement or arrangement; provided further, however, that the contractor or subcontractor shall not be required to employ women and minority advanced trainees and trainees in numbers which result in the employment of advanced trainees and trainees as a percentage of the total workforce

for the construction trade, which percentage significantly exceeds the apprentice to journey worker ratio specified in the applicable collective bargaining agreement, or in the absence of a collective bargaining agreement, exceeds the ratio established by practice in the area for said construction trade. Also, the contractor or subcontractor agrees that, in implementing the procedures of (B) above, it shall, where applicable, employ minority and women workers residing within the geographical jurisdiction of the union.

After notification of award, but prior to signing a construction contract, the contractor shall submit to the public agency compliance officer and the Division an initial project workforce report (Form AA 201) electronically provided to the public agency by the Division, through its website, for distribution to and completion by the contractor, in accordance with N.J.A.C. 17:27-7. The contractor also agrees to submit a copy of the Monthly Project Workforce Report once a month thereafter for the duration of this contract to the Division and to the public agency compliance officer.

The contractor agrees to cooperate with the public agency in the payment of budgeted funds, as is necessary, for on-the-job and/or off-the-job programs for outreach and training of minorities and women.

(D) The contractor and its subcontractors shall furnish such reports or other documents to the Division of Public Contracts Equal Employment Opportunity Compliance as may be requested by the Division 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 Division of Public Contracts Equal Employment Opportunity Compliance for conducting a compliance investigation pursuant to **Subchapter 10 of the Administrative Code (NJAC 17:27)**.

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45. INVESTMENT ACTIVITIES IN IRAN

Pursuant to *N.J.S.A. 52:32-55 et seq.*, prohibits State and local public contracts with persons or entities engaging in certain investment activities in energy or finance sectors of Iran.

46. COMPLIANCE WITH THE PUBLIC WORKS CONTRACTOR REGISTRATION ACT - (N.J.S.A. 34:11-56.48 et. seq.)

Pursuant to the above-referenced law, Bidders are required to be registered with the New Jersey Department of Labor and Workforce Development and to possess a current certificate by said Department indicating compliance with the Act prior to the time and date that bids are received. Bidders are notified of this requirement of their compliance. Such certificates or applications shall also be provided for each Subcontractor furnishing plumbing and gas fitting, steam and hot water heating and ventilating apparatus, and all kindred work, steam power plants and kindred work, electrical work, structural steel and ornamental iron work, and such other subcontractors as the specifications require relative to prior identification.

47. UTILITIES

Attention of the bidder is directed to the fact that the approximate locations of known utility structures and facilities that may be encountered within and adjacent to the limits of the Work are shown on the plans and described herein. The accuracy and completeness of this information is not guaranteed by the County Engineer and the bidder is advised to ascertain for himself all the facts concerning the location of these and other utilities.

The Contractor will not proceed with his Work until he has made diligent inquiries of all public utility and municipal officials to determine the exact location of all-underground structures and pipes within the site of the Project. The Contractor will notify utility owners not less than ten (10) days in advance of the time he proposes to perform any Work that will endanger or affect their facilities in compliance with **New Jersey One-Call**. In excavating in any part of the Work, care must be taken not to remove or damage any gas, water, sewer, or other pipe, conduit, or structure, - public or private - without the concurrence of the owner and the County Engineer. The Contractor will, at his own expense, shore up, secure and maintain a continuous flow in such structures, and will keep them in repair until final acceptance of the Work.

When pipes or other structures are encountered or when the removal, relocation or protection of these utilities are necessary in carrying out the Project as planned, the Contractor will cooperate with the owner of said utilities and will permit the owners or their agents access to the site of the Work in order to relocate or protect their facilities and not hinder or delay unnecessarily the Work of the owners in moving same. No extra allowance

of payment will be made to the Contractor for the use of any materials, equipment, etc., or for the performance of any Work in connection with the moving of said structures unless the Contractor is specifically ordered by the County Engineer to furnish such materials, equipment, or services. If directed by the County Engineer to do any Work or furnish any materials or equipment, payment will be allowed the Contractor in accordance with the unit prices bid for such Work, or, if such items are not scheduled in the proposal, such Work shall be allowed "Supplemental Work" as provided in Section 39 of these general specifications. The corporations, companies, agencies or municipalities owning or controlling the utilities, and the name, and telephone numbers are listed in the beginning of the Technical Specifications.

48. MATERIAL COMPLIANCE AND SHOP DRAWINGS

The Contractor will require the manufacturer or supplier to furnish three (3) copies of Certification of Compliance with each delivery of materials, components and manufactured items for the Project. Two (2) copies will be furnished to the County Engineer; one copy will be retained by the Contractor. Certificates of Compliance will contain the following information:

1. Project to which material is consigned;
2. Name of the Contractor to which the material is supplied;
3. Kind of material supplied;
4. Quantity of material represented by the Certificate;
5. Means of identifying the consignment, such as label marking, seal number, etc.;
6. Date and method of shipment;
7. That the material is in conformity with the pertinent specifications stated in the certificate; and
8. Signature of a person having legal authority to bind the supplier.

The Contractor will submit to the County Engineer for his approval five (5) copies of complete and fully detailed shop or working drawings for those items listed in the beginning of the technical specifications.

Each drawing will identify the name of the job, location and Contractor.

All drawings will be approved in accordance with the standard specifications. Refer to the Technical Specifications for specific items.

All materials or articles used in the Work will be of American manufacture, insofar as same are available, in conformance with N.J.S.A. 40A:11-18.

49. PRECONSTRUCTION

In order to provide full coordination of this Project among the parties concerned, the County Engineer will arrange for a preconstruction meeting between the Contractor, County Engineer and other interested parties as soon as possible after the contract is executed. At this meeting the Contractor will present his proposed schedule of Work which shall be subject to review and approval of the County through its designated representatives.

50. DISPUTES UNDER THE CONTRACT

A dispute arising under the Contract shall be submitted in writing to the County Engineer with all facts and supporting data. The County Engineer will review the dispute and issue his decision or request additional facts or documentation after which he will render his decision.

In the event the dispute is not then resolved, the matter shall, pursuant to law, be submitted to mediation before being submitted to a court of competent jurisdiction venued in Union County.

The County Engineer will notify the County Counsel when a matter is to be submitted to mediation. The County Counsel will communicate with the parties and inform them of the procedures to be followed in making such a submission.

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51. CONTRACTOR BUSINESS REGISTRATION CERTIFICATE

Pursuant to N.J.S.A. 52:32-44, the County of Union is prohibited from entering into a contract with an entity unless the bidder/proposer/contractor, and each subcontractor that is required by law to be named in a bid/proposal/contract has a valid Business Registration Certificate on file with the Division of Revenue and Enterprise Services within the Department of the Treasury.

Prior to contract award or authorization, the contractor shall provide the County of Union with its proof of business registration and that of any named subcontractor(s).

Subcontractors named in a bid or other proposal shall provide proof of business registration to the bidder, who in turn, shall provide it to the County of Union prior to the time a contract, purchase order, or other contracting document is awarded or authorized.

During the course of contract performance:

- 1) the contractor shall not enter into a contract with a subcontractor unless the subcontractor first provides the contractor with a valid proof of business registration.
- 2) the contractor shall maintain and submit to the County of Union a list of subcontractors and their addresses that may be updated from time to time.
- 3) the contractor and any subcontractor providing goods or performing services under the contract, and each of their affiliates, shall collect and remit to the Director of the Division of Taxation in the Department of the Treasury, 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 the State. Any questions in this regard can be directed to the Division of Taxation at (609)292-6400. Form NJ-REG can be filed online at <http://www.state.nj.us/treasury/revenue/busregcert.shtml>.

Before final payment is made under the contract, the contractor shall submit to the County of Union a complete and accurate list of all subcontractors used and their addresses.

Pursuant to N.J.S.A. 54:49-4.1, a business organization that fails to provide a copy of a business registration as required, or that provides false business registration information, shall be liable for a penalty of \$25 for each day of violation, not to exceed \$50,000, for each proof of business registration not properly provided under a contract with a contracting agency.

52. BID PROTEST – LEGAL FEES AND COSTS

In the event a Bidder unsuccessfully challenges a Bid Submission by filing an action in a court of law concerning same, said Bidder shall be responsible for payment of reasonable legal costs and fees incurred by the County relating to said protest.

53. AMERICAN GOODS AND PRODUCTS WHERE POSSIBLE

Bidder shall comply with the requirements of N.J.S.A. 40A:11-18 and use only manufactured and farm products of the United States, wherever available, for the Project.

54. NEW JERSEY PAY-TO-PLAY REQUIREMENTS

This Contract is required by law to be publicly advertised for bids. As such, lists of political contributions pursuant to N.J.S.A. 19:44A-1 et seq. are NOT REQUIRED to be provided with the bids.

55. STATEMENT OF EQUIPMENT TO BE USED IN CONSTRUCTION

Pursuant to N.J.S.A. 40A:11-20 entitled Certificate of Bidder Showing Ability to Perform Contract, the County requires a Certification from all bidders submitting a bid showing that the Bidder owns, leases, or controls all necessary equipment required by the Project Plans and Specifications. All bidders shall provide this information at the time of the bid opening using the attached form entitled, "CERTIFICATE OF BIDDER SHOWING ABILITY TO PERFORM CONTRACT".

If the Bidder is not the actual owner of the equipment, it shall state the source from which the equipment will be obtained and shall attach a certificate from the owner or person in control of the equipment demonstrating that the equipment owner has granted the Bidder control of the requisite equipment during such time as may be necessary for completion of the portion of the contract for which the equipment is necessary.

56. NEW JERSEY SALES AND USE TAX REQUIREMENTS,

Contractors are required to comply with the following:

New Jersey Sales and Use Tax Requirements: All contractors with subcontractors, or any of their affiliates, who enter into contracts for the provision of goods or services with or for New Jersey local government entities, are required to collect and remit to the New Jersey Director of Taxation in the Department of the Treasury the use tax due on all of their sales of tangible personal property delivered into the State of New Jersey pursuant to the "Sales and Use Tax Act," (N.J.S.A. 54:32B-1 et seq.), regardless of whether the tangible personal property is intended for a

contract with the contracting agency. This tax shall be remitted for the term of the Contract.

For purposes herein "affiliate" shall mean any entity that: (a) directly, indirectly, or constructively controls another entity, (b) is directly, indirectly, or constructively controlled by another entity, or (c) is subject to the control of a common entity. For purposes of the immediately preceding sentence, an entity controls another entity if it owns, directly or indirectly, more than fifty percent (50%) of the ownership interest in that entity. NJSA 52:32-44(g)(3).

BIDDER'S NAME: _____

EDWARD T. OATMAN
COUNTY MANAGER

MICHELE HAGOPIAN, ASSISTANT DIRECTOR
DIVISION OF PURCHASING

BID DOCUMENT SUBMISSION CHECKLIST

**ALL SIGNATURES AND SEALS SHALL BE ORIGINALS UNLESS OTHERWISE SPECIFIED
BID SHEETS SHOULD NOT BE SUBMITTED DOUBLE SIDED PAGES, (SINGLE SIDE ONLY)**

EACH BIDDER SHOULD COMPLETE THIS FORM AND INITIAL EACH ENTRY.

DATE COMPLETED: _____

**PLEASE SUBMIT BID DOCUMENTS ON SINGLE SIDED PAPER ONLY, WITH THE EXCEPTION OF
THE SURETY AND BID BOND DOCUMENTS.**

**IN ACCORDANCE WITH THE BID SPECIFICATIONS I HAVE REVIEWED, COMPLETED / EXECUTED
AND INCLUDED THE FOLLOWING FORMS:**

_____ Bid Form Page (**Signed, Dated and Bid on all alternatives applicable to the Work**).

_____ Security in the form of:

_____ Bid bond in an amount equal to 10% of the total amount of this bid not to exceed \$20,000.00; or

_____ Certified check or cashier's check in the amount of 10% of this bid not to exceed \$20,000.00

_____ Consent of Surety form signed by a Surety Company if the total amount of your Bid is over \$36,000.00. If your bid is accepted, the Surety Company that provided the Consent shall be required to furnish a Performance, Labor and Materials Bond in the amount of 100% of the award of the contract.

The County of Union has provided its Consent of Surety form for your use. The use of this form by your Surety Company will expedite the bid review process and eliminate the possibility of having your bid rejected. If, however, you should need to use another form, please use language similar to that used on the Union County form and avoid making any additions or deletions to the Union County form language. In lieu of the Consent of Surety you may submit a Certified Check in the full amount of the bid.

_____ STATEMENT OF BIDDER OWNERSHIP. Pursuant to N.J.S.A. 52:25-24.2, which includes **BOTH** of the following documents:

- Bidder Signature Page
- Bidder Disclosure Statement (**Fill out 2 pages completely**)

_____ SUBCONTRACTOR IDENTIFICATION. Pursuant to N.J.S.A. 40A:11-16, which includes **BOTH** of the following documents:

- Subcontractor Identification Statement: List of Subcontractors (**only for certain types of work**)
- Subcontractor Identification Certification

_____ Acknowledgement of Addendum form: (**This form is to be used only when an addendum has been added to the specifications**).

_____ A copy of the State of New Jersey Department of the Treasury, Division of Revenue, **Business Registration Certificate ("BRC")** should be included with the bids as it must be received by the County prior to the award of the contract. The BRC provided must show that the Bidder was registered at the time of receipt of bids or the bid will be rejected.

BIDDER'S NAME: _____

_____ A copy of the State of New Jersey Department of the Treasury, Division of Revenue, **Business Registration Certificate ("BRC")** of all named or listed subcontractors (List of Subcontractors) in a Construction bid should be included with the bid as the BRC(s) must be received by the County prior to the award of the contract. Each subcontractor's certificate provided must show that the subcontractor was registered at the time of the receipt of bids or the bid will be rejected.

_____ Affirmative Action Requirement

_____ Experience Statement

_____ Certificate of Bidder showing ability to perform Contract

_____ Non-Collusion Affidavit – Fill out completely and notarize

_____ Certificates from New Jersey Department of Labor and Workforce and Workforce Development – Public Works Contractor Registration Act. **(Only for certain types of work)**

_____ Federal Attachments **(If applicable)**

_____ NJDPMC Certificate / Notice of Classification **(If applicable)**

_____ Americans with Disabilities Act

_____ Statement of Bidder's Qualifications

_____ Contractor Performance Record

_____ Affidavit Regarding List of Debarred, Suspended or Disqualified Bidders

_____ Prior Negative Experience Questionnaire

_____ Contractor's Certification of Compliance – New Jersey Prevailing Wage Act

_____ Uncompleted Contracts Affidavit **(For Bidder, if applicable) MUST ALSO PROVIDE DPMC FORM 701**

_____ Certificate of Insurance Statement

_____ Collection of Use Tax on Sales to Local Government Statement

_____ Time of Completion

_____ Disclosure of Investment Activities in Iran Certification Form

I HAVE TAKEN THE FOLLOWING ACTIONS:

_____ Visited the site and attended the Pre-Bid Meeting **(Where applicable)**

_____ Reviewed the Contract Documents (including any permits the County or its professionals may have obtained), Work, Site, Locality, and Local Conditions and Laws and Regulations that in any manner may affect Cost, Progress, Performance or Furnishing of Work.

_____ Reviewed Bond Requirements

_____ Provided Proof of Compliance with New Jersey Prevailing Wage Act

_____ Reviewed Form of Owner/Contractor Agreement and General Conditions to the Contract

NOTE: QUESTIONS PERTAINING TO THIS BID ARE TO BE DIRECTED TO DIVISION OF ENGINEERING AT 908-789-3675

BIDDER'S NAME: _____

BIDDING DOCUMENTS

The Bidding Documents consist of the following items:

- **ADDENDA, if issued**
- **CLARIFICATIONS, if issued**
- **INSTRUCTION TO BIDDERS**
- **BID FORM**
- **OWNER-CONTRACTOR AGREEMENT (AIA 101) AND GENERAL CONDITIONS (AIA 201)**
- **SPECIFICATIONS:** As outlined in the Table of Contents and included in the Project Manual.
- **DRAWINGS:** As per List of Drawings, indicated on the Project Title Sheet.

BIDDER'S NAME: _____

BID FORM

I/We have carefully examined the plans, specifications, and advertisement for bid for the

**Board of Elections Leak Repairs,
City of Elizabeth, County of Union,
New Jersey
BA#19-2021; Union County Engineering Project # 2019-024**

that is on file in the Union County Division of Engineering. I/We have inspected the site of the work and will contract to do all the work and furnish all materials mentioned in said plans and specifications. Work will be accomplished in the manner prescribed therein.

LUMP SUM BID:

Written

Figures

BID CONTINGENCY: (To be used if and when directed by the County)

Seventy Thousand Dollars _____
Written

\$ 70,000.00 _____
Figures

TOTAL LUMP SUM PLUS BID CONTINGENCY AMOUNT:

Written

Figures

NOTE: Bid Contingency may include one-half of one percent of contract amount set aside for local training if and when directed by the County.

BIDDER'S NAME: _____

CONSENT OF SURETY
TO ACCOMPANY PROPOSAL (BID)

_____ (hereinafter called Surety), organized and existing under the laws of the State of _____ duly authorized and qualified to transact business in the State of New Jersey, in consideration of the sum of One Dollar (\$1.00), lawful money of the United States of America, to it in hand paid, receipt whereof is hereby acknowledged, and in consideration, hereby certifies and agrees that if the contract for which the attached proposal is made be awarded to _____ (hereinafter called Contractor) for the performance of certain work and labor or the supplying of certain materials, or both, as more particularly set forth in said proposal and described for purposes of this instrument as a proposal for _____ to the COUNTY OF UNION and if Contractor shall enter into the contract, Surety will become bound as surety for its faithful performance, labor and material payment and will provide the Contractor with a performance, labor and material payment bond in the full amount of the contract price.

NOTE:
Expiration date
Needed if Annual
Surety

NAME OF INSURANCE COMPANY
ADDRESS: _____

ORIGINAL SIGNATURE
ATTORNEY-IN-FACT FOR INSURANCE CO.

NOTE: PROOF OF AUTHORITY OF OFFICERS OF SURETY COMPANY TO EXECUTE THIS DOCUMENT MUST BE SUBMITTED.

BIDDER'S NAME: _____

BIDDER SIGNATURE PAGE

THE BIDDER MUST READ THE FOLLOWING INSTRUCTIONS TO COMPLETE THIS PAGE:

1. If doing business under a **trade name, partnership or a sole proprietorship**, you must submit the bid under exact title of the trade name, partnership, or proprietorship, and the bid must be signed by either the **owner**, or a **partner** and **witnessed** by a **notary public**.
2. If a **Corporation**, the bid must be signed by the **President** or **Vice President** and **witnessed** by a **Corporate Secretary** (corporate title must be exact) and **affix corporate seal**. If a Corporate Secretary does not exist, President or Vice President's signature shall be witnessed by a Notary Public.
3. Other persons **authorized** by **corporate resolution** to execute agreements in its behalf may also sign the bid documents (pages). **Copy of a resolution must accompany the bid.**
4. The person who signs this bid form **must also** sign the **Non-Collusion Affidavit**.
5. You **cannot** witness your own signature.

NAME OF BIDDER

ADDRESS OF BIDDER

ORIGINAL SIGNATURE
CORPORATE SECRETARY

PRINT NAME AND TITLE
CORPORATE SECRETARY

TEL: _____
FAX: _____
E-Mail: _____

BY: _____
ORIGINAL SIGNATURE

Corporate Seal

PRINT OR TYPE NAME AND TITLE

WARNING: IF YOU FAIL TO FULLY, ACCURATELY, AND COMPLETELY SUPPLY THE INFORMATION REQUESTED ON THIS PAGE, YOUR BID MAY BE REJECTED.

BIDDER'S NAME: _____

STATEMENT OF OWNERSHIP DISCLOSURE

N.J.S.A. 52:25-24.2 (P.L. 1977, c.33, as amended by P.L. 2016, c.43)

This statement shall be completed, certified to, and included with all bid and proposal submissions. Failure to submit the required information is cause for automatic rejection of the bid or proposal.

Name of Organization: _____

Organization Address: _____

Part I Check the box that represents the type of business organization:

- Sole Proprietorship (skip Parts II and III, execute certification in Part IV)
- Non-Profit Corporation (skip Parts II and III, execute certification in Part IV)
- For-Profit Corporation (any type) Limited Liability Company (LLC)
- Partnership Limited Partnership Limited Liability Partnership (LLP)
- Other (be specific): _____

Part II

- The list below contains the names and addresses of all stockholders in the corporation who own 10 percent or more of its stock, of any class, or of all individual partners in the partnership who own a 10 percent or greater interest therein, or of all members in the limited liability company who own a 10 percent or greater interest therein, as the case may be. **(COMPLETE THE LIST BELOW IN THIS SECTION)**

OR

- No one stockholder in the corporation owns 10 percent or more of its stock, of any class, or no individual partner in the partnership owns a 10 percent or greater interest therein, or no member in the limited liability company owns a 10 percent or greater interest therein, as the case may be. **(SKIP TO PART IV)**

(Please attach additional sheets if more space is needed):

BIDDER'S NAME: _____

Name of Individual or Business Entity	Home Address (for Individuals) or Business Address

Part III DISCLOSURE OF 10% OR GREATER OWNERSHIP IN THE STOCKHOLDERS, PARTNERS OR LLC MEMBERS LISTED IN PART II

If a bidder has a direct or indirect parent entity which is publicly traded, and any person holds a 10 percent or greater beneficial interest in the publicly traded parent entity as of the last annual federal Security and Exchange Commission (SEC) or foreign equivalent filing, ownership disclosure can be met by providing links to the website(s) containing the last annual filing(s) with the federal Securities and Exchange Commission (or foreign equivalent) that contain the name and address of each person holding a 10% or greater beneficial interest in the publicly traded parent entity, along with the relevant page numbers of the filing(s) that contain the information on each such person. **Attach additional sheets if more space is needed.**

Website (URL) containing the last annual SEC (or foreign equivalent) filing	Page #'s

Please list the names and addresses of each stockholder, partner or member owning a 10 percent or greater interest in any corresponding corporation, partnership and/or limited liability company (LLC) listed in Part II **other than for any publicly traded parent entities referenced above.** The disclosure shall be continued until names and addresses of every noncorporate stockholder, and individual partner, and member exceeding the 10 percent ownership criteria established pursuant to N.J.S.A. 52:25-24.2 has been listed. **Attach additional sheets if more space is needed.**

BIDDER'S NAME: _____

Stockholder/Partner/Member and Corresponding Entity Listed in Part II	Home Address (for Individuals) or Business Address

Part IV Certification

I, being duly sworn upon my oath, hereby represent that the foregoing information and any attachments thereto to the best of my knowledge are true and complete. I acknowledge: that I am authorized to execute this certification on behalf of the bidder/proposer; that the **County of Union** is relying on the information contained herein and that I am under a continuing obligation from the date of this certification through the completion of any contracts with **County of Union** to notify the **County of Union** in writing of any changes to the information contained herein; that I am aware that it is a criminal offense to make a false statement or misrepresentation in this certification, and if I do so, I am subject to criminal prosecution under the law and that it will constitute a material breach of my agreement(s) with the, permitting the **County of Union** to declare any contract(s) resulting from this certification void and unenforceable.

Full Name (Print):		Title:	
Signature:		Date:	

BIDDER'S NAME: _____

SUBCONTRACTOR IDENTIFICATION STATEMENT

LIST OF SUBCONTRACTORS

This form is ONLY required for plumbing and gas fitting, steam and hot water heating and ventilating apparatus, steam power plants, electrical work, structural steel, ornamental iron work, and any other trades required to be identified by the specifications (including, but not limited, to satisfying any DPMC Classification requirements).

CHECK THIS BOX IF NONE OF THE ABOVE LISTED TRADES OR THOSE REQUIRED TO BE IDENTIFIED IN THE SPECIFICATIONS ARE TO BE USED TO PERFORM THE WORK

In compliance with N.J.S.A. 40A:11-16 and the bid specifications, the undersigned hereby lists the name or names of the following subcontractors:

Company Name: _____

Address: _____

Telephone: _____ Subcontract Amount: \$ _____

Specific Scope of Work Subcontracted: _____

License No. _____

Company Name: _____

Address: _____

Telephone: _____ Subcontract Amount: \$ _____

Specific Scope of Work Subcontracted: _____

License No. _____

Company Name: _____

Address: _____

Telephone: _____ Subcontract Amount: \$ _____

Specific Scope of Work Subcontracted: _____

License No. _____

IF MORE THAN THREE SUBCONTRACTORS, PLEASE COPY THIS SHEET AS NECESSARY AND ATTACH TO THE BID PACKAGE.

(Continued on following page)

BIDDER'S NAME: _____

SUBCONTRACTOR IDENTIFICATION CERTIFICATION

Note the law does not permit the listing of alternate subcontractors. However, multiple subcontractors for the same trade are permitted to be named provided the bidder meets the following requirements:

- Bidder identifies each subcontractor named for that category;
- Bidder states the scope of work, goods and services (the portion of the work) to be performed by each subcontractor; and
- Bidder provides the price quote provided by each subcontractor.

The bidder is advised that any change of subcontractor(s) from ones listed herein is subject to the County's approval. Change of subcontractor(s) will be approved only if made for good cause and not as a result of an arbitrary purpose.

The undersigned Bidder certifies and declares that the subcontractors listed above shall be used as subcontractors to complete certain portions of the work in this project as set forth in N.J.S.A. 40A: 11-16.

Witness

Date _____

NAME OF BIDDER

ADDRESS

By: _____
ORIGINAL SIGNATURE ONLY

PRINT NAME AND TITLE

BIDDER'S NAME: _____

ACKNOWLEDGMENT OF ADDENDUM

COUNTY OF UNION

(Name of Construction /Public Works Project)

(Project or Bid Number)

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 County of Union'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.

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

ACKNOWLEDGMENT BY BIDDER:

NAME OF BIDDER: _____

ORIGINAL SIGNATURE: _____

PRINTED NAME AND TITLE: _____

DATE: _____

BIDDER'S NAME: _____

CONTRACTOR BUSINESS REGISTRATION CERTIFICATE

New Mandatory Requirement - Effective 1/18/2010

The recently enacted **P.L. 2009, c.315**, requires that effective January 18, 2010; a contracting agency must receive proof of the bidder's business registration prior to the award of a contract. However, the proof must show that the bidder was in fact registered with the State of New Jersey Department of the Treasury, Division of Revenue and obtained the business registration prior to the receipt of bids.

If subcontractors are named on the bid, proof of the business registration for each subcontractor must be provided prior to the award of bid. Similarly to the bidder, the proof must show that each subcontractor was registered with the State of New Jersey Department of the Treasury, Division of Revenue and obtained the business registration prior to the receipt of bids.

Proof of business registration shall be

- A copy of a Business Registration Certificate issued by the Department of the Treasury, Division of Revenue; or
- A copy of the web version provided by the NJ Division of Revenue, or

Register online at www.nj.gov/treasury/revenue/taxreg.htm. Click the "online" link and then select "Register for Tax and Employer Purposes or call the Division at 609-292-1730.

Note: A NJ Certificate of Authority is not acceptable.

FAILURE to submit proof of registration of the bidder or any subcontractor named on the bid prior to the award of a contract shall be cause to reject the bids.

FAILURE of the bidder or any subcontractor named on the bid to be registered prior to the receipt of bids is cause for a **MANDATORY REJECTION** of bids. (A NON-WAIVABLE DEFECT). This covers construction work as well as non-construction bids.

IN ADDITION:

The contractor shall provide written notice to all **subcontractors and suppliers** not specifically named on the bid of the responsibility to register and 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.

For the term of the contract, the contractor and each of its affiliates and a subcontractor and each of its affiliates [N.J.S.A. 52:32-44(g)(3)] shall collect and remit to the Director, New Jersey Division of Taxation, the use tax due pursuant to the Sales and Use Tax Act on all sales of tangible personal property delivered into this State, regardless of whether the tangible personal property is intended for a contract with a contracting agency.

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 a contracting agency.

BIDDER'S NAME: _____

BUSINESS REGISTRATION
Mandatory Requirement

P.L. 2009, c.315, requires that effective January 18, 2010; a contracting agency must receive proof of the bidder's business registration prior to the award of a contract. However, the proof must show that the bidder was in fact registered with the State of New Jersey Department of the Treasury, Division of Revenue and obtained the business registration prior to the receipt of bids.

If subcontractors are named on the bid, proof of the business registration for each must be provided prior to the award of a contract. Similarly to the bidder, the proof must show that each subcontractor was registered with the State of New Jersey Department of the Treasury, Division of Revenue and obtained the business registration prior to the receipt of bids.

Proof of business registration shall be:

- A copy of a Business Registration Certificate issued by the Department of Treasury, Division of Revenue; or
- A copy of the web printed version provided by the NJ Division of Revenue

STATE OF NEW JERSEY
BUSINESS REGISTRATION CERTIFICATE
FOR STATE AGENCY AND CASINO SERVICE CONTRACTORS

DEPARTMENT OF TREASURY
DIVISION OF REVENUE
PO BOX 382
TRENTON, NJ 08646

TAXPAYER NAME: TAX REGISTRATION TEST ACCOUNT
TRADE NAME: CLIENT REGISTRATION
TAXPAYER IDENTIFICATION#: 070-007-382/000
SEQUENCE NUMBER: 0107200
ADDRESS: 847 ROEBLING AVE, TRENTON, NJ 08611
ISSUANCE DATE: 07/14/04
EFFECTIVE DATE: 01/01/01

For Office Use Only:
20041014112823533

ATTACH BRC HERE

BIDDER'S NAME: _____

AFFIRMATIVE ACTION REQUIREMENT

REQUIRED AFFIRMATIVE ACTION EVIDENCE

General Requirements of P.L. 1975, c. 127: You are hereby put on notice that:

CONSTRUCTION CONTRACTS: The successful contractor must submit within three (3) days of the notice of intent to award or the signing of the contract the initial project manning report (A.A.201). This report should be submitted at the time the signed contract is returned to the County of Union. Attention: *Affirmative Action Officer*.

If the successful contract does not submit the initial project manning report (A.A.201) within the three (3) days from the time the signed contract is returned to the County of Union, the County of Union WILL declare the contractor non-responsive and award the contract to the next lowest responsible bidder.

NAME OF BIDDER

ORIGINAL SIGNATURE

PRINT OR TYPE NAME AND TITLE

DATE THIS FORM IS COMPLETED

BIDDER'S NAME: _____

EXPERIENCE STATEMENT

I hereby certify that my company has performed the following private or public work, which is relevant to this bid. I further certify that my company has never defaulted under any contract. Should you not sign this form due to prior defaults, please provide details on an attached sheet.

Witness

Date

NAME OF BIDDER

ADDRESS

By: _____
ORIGINAL SIGNATURE ONLY

PRINT NAME AND TITLE

YOU MAY ATTACH ADDITIONAL SHEETS, BUT YOU MUST SIGN AND WITNESS THIS SHEET.

BIDDER'S NAME: _____

Contractor Registration Advisement
For Public Works Projects

A new law, known as "The Public Works Contractor Registration Act" (P.L. 1999, c.238), became effective April 11, 2000. Under the Act, no contractor/subcontractor will be permitted to bid on or engage in any contract for public work, as defined in Section 2 of P.L. 1963, c.150 (C:34:11-56.26), unless that contractor/subcontractor is registered with the New Jersey Department of Labor and Workforce and Workforce Development. The Act provides that upon registration with the Department, a public works contractor/subcontractor will be issued a certificate by the Department indicating compliance with the Act's requirements. The registration fee has been set at \$300.00 per year. Upon the effective date of the Act, public bodies will be expected to request production of such a certificate from those bidding on or engaging in public works projects.

It is important to note that the term "contractor," is defined in the, Act as, "a person, partnership, association, joint stock company, trust, corporation or other legal business entity or successor thereof who enters into a contract which is subject to the provision of the "New Jersey Prevailing Wage Act," P.L. 1963, c.150 (C.34:11-56.25, et seq.) for the construction, reconstruction, demolition, alteration, repair or maintenance of a public building regularly open to and used by the general public or a public institution, and includes any subcontractor or lower tier subcontractor as defined herein: except that, for the purposes of the act, no pumping station, treatment plant or other facility associated with utility and environmental construction, reconstruction, demolition, alteration, repair or maintenance shall be regarded as a public building regularly open to and used by the general public or a public institution."

Registration forms, copies of the Act, and other relevant information can be obtained by contacting:

Contractor Registration Unit
New Jersey Department of Labor and Workforce and Workforce Development
Division of Wage & Hour Compliance
PO Box 389
Trenton, New Jersey 08625-0389
Telephone: 609-292-9464
Fax: 609-633-8591
E-mail: contreg@dol.state.nj.us

BIDDER'S NAME: _____

AMERICANS WITH DISABILITIES ACT
EQUAL OPPORTUNITY FOR INDIVIDUALS WITH DISABILITIES

The contractor and the County of Union (hereafter "Owner") do hereby agree that the provisions 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 Owner pursuant to this contract, the contractor agrees that the performance shall be in strict compliance with the Act. In the event 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 Owner in any action or administrative proceeding commenced pursuant to this Act. The contractor shall indemnify, protect, and save harmless the Owner, 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 Owner's grievance procedure, the contractor agrees to abide by any decision of the Owner which is rendered pursuant to said grievance procedure. If any action or administrative proceeding results in an award of damages against the Owner, or if the Owner 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 Owner 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 Owner or any of its agents, servants, and employees, the Owner shall expeditiously forward or have forwarded to the contractor every demand, complaint, notice, summons, pleading, or process received by the Owner or its representatives.

It is expressly agreed and understood that any approval by the Owner 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 Owner pursuant to this paragraph.

It is further agreed and understood that the Owner 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 Owner from taking any other actions available to it under any other provisions of this Agreement or otherwise at law.

Name _____
(Please print or type)

Signature _____ **Date** _____

BIDDER'S NAME: _____

STATEMENT OF BIDDER'S QUALIFICATIONS

All questions must be answered and the data given must be clear and comprehensive. This statement must be notarized. Questions may be answered on separate attached sheets. The Bidder may submit any additional information it desires.

1. _____
(Name of Bidder)

2. _____
(Permanent Main Office Address)

3. _____
(When Organized)

4. _____
(If a Corporation, where incorporated)

5. Number of years your organization has been engaged in construction or contracting business under present firm or trade name? _____

6. How many years of experience in construction work has your organization had (a) as a general contractor? And/or (b) As a subcontractor? _____

7. Contracts on hand: (Attach a list or table showing gross amounts of each Contract and the appropriate dates of completion) _____

8. General character of work performed by you. _____

9. Have you ever failed to complete any work awarded to you? _____

10. Have you ever defaulted on a Contract? _____ If so, complete details, including where and why?

BIDDER'S NAME: _____

STATEMENT OF BIDDER'S QUALIFICATIONS - (continued)

11. Has any officer or partner of your organization ever failed to complete a construction contract handled in its own name? If so, state name of individual, name of owner, location and type of project, and reason for the failure to complete. _____

12. List your major equipment available for this Contract.

13. Experience in the construction work similar in importance to this Project.

14. Have you had any material adverse changes from the trades as listed in NJ Notice of Classification within last five (5) years? _____. If so, list prior classification.

15. Background and experience of the principal members of your organization, including the officers.

Individual's Name	Present Position or Office	Yrs. of Construction Experience	Magnitude & Type of Work	In What Capacity

BIDDER'S NAME: _____

16. Bank Reference. (Name, Address, Phone, Representative) _____

17. Will you, upon request, fill out a detailed financial Statement? _____

18. The undersigned hereby authorizes and requests any person, firm or corporation to furnish any information requested by the proper agency in verification of the responses comprising this Statement of Bidder's Qualifications.

19. Bidder's telephone number, fax number and e-mail address (if applicable).

Phone _____

Fax _____

E-mail _____

Mobile _____

Dated at _____ this _____ day of _____, 20__.

BIDDER (Signature)

BIDDER (Print Name)

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

(Seal) Notary Public of New Jersey/
Specify Other State
My Commission Expires _____, 20__.

**NOTE: FAILURE TO COMPLETE AND SUBMIT THIS DOCUMENT WITH YOUR PROPOSAL
MAY RESULT IN A REJECTION OF YOUR BID.**

BIDDER'S NAME: _____

CONTRACTOR PERFORMANCE RECORD

List all contracts completed by you below or provide separate form.

Name of Owner	Name & Location of Project: Type Of Work	Prime or Sub-Cont.	Engineer or Architect in Charge for Owner	Contract Price (Omit Cost)	Date Completed	Was Time* Extension Necessary	Were Any Penalties Imposed	Were Liens* Claims or Stop Notice Filed

* If answer is YES, provide explanation of details in connection with non-completion of contracts, time extensions, penalties imposed, labor troubles, liens, claims and notices filed against contracts listed in preceding item "Performance Record" on an attached sheet.

NOTE: FAILURE TO COMPLETE AND SUBMIT THIS DOCUMENT WITH YOUR PROPOSAL MAY RESULT IN A REJECTION OF YOUR BID.

BIDDER'S NAME: _____

CERTIFICATION

The information above is true and complete to the best of my knowledge and belief.

(Name of Organization)

(Signature)

(Title)

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

(Seal) Notary Public of New Jersey/
Specify Other State
My Commission Expires _____, 20____.

BIDDER'S NAME: _____

PRIOR NEGATIVE EXPERIENCE QUESTIONNAIRE

(N.J.S.A. 40A:11-4)

1. Within the past ten (10) years, have you been found, through either court adjudication, arbitration, mediation, or other contractually stipulated alternate dispute resolution mechanism, to have: failed to provide or perform goods or services; or failed to complete a contract in a timely manner; or otherwise performed unsatisfactorily under a prior contract with a public entity?

_____ yes _____ no If yes, please provide full, detailed explanation.

2. Within the past ten (10) years, have you defaulted on a contract, thereby requiring a public entity to utilize the services of another contractor to provide the goods or perform the services or to correct or complete the contract?

_____ yes _____ no If yes, please provide full, detailed explanation.

3. Within the past ten (10) years, have you defaulted on a contract, thereby requiring a public entity to look to your surety for completion of the contract or tender of the costs of completion?

_____ yes _____ no If yes, please provide full, detailed explanation.

4. Within the past ten (10) years, have you been debarred or suspended from contracting with any of the agencies or department of the executive branch of the State of New Jersey at the time of the contract award, where the action was based on failure to perform a contract for goods or services with a public entity?

_____ yes _____ no If yes, please provide full, detailed explanation.

BIDDER'S NAME: _____

PRIOR NEGATIVE EXPERIENCE CERTIFICATION

I hereby certify that the above statements are true and accurate as of this _____
day of _____, 20__.

Name of Contractor

By _____
(Signature of Authorized Representative)

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

(Seal) Notary Public of New Jersey/
Specify Other State
My Commission Expires _____, 20__.

NOTE: FAILURE TO COMPLETE AND SUBMIT THIS DOCUMENT WITH YOUR PROPOSAL MAY RESULT IN A REJECTION OF YOUR BID.

BIDDER'S NAME: _____

TO BE COMPLETED ONLY WHEN FINAL PAYMENT IS REQUESTED

CONTRACTOR'S CERTIFICATION OF COMPLIANCE - NEW JERSEY PREVAILING WAGE ACT

TO: County of Union
Division of Engineering
2325 South Avenue
Scotch Plains, New Jersey 07076

CONTRACT:

PROJECT:

In accordance with the requirements of the New Jersey Prevailing Wage Act, N.J.S.A. 34:11-56 et al *, the undersigned contractor on the public work being performed for:

COUNTY OF UNION

hereby certifies that he/she has complied with the contract requirements regarding the payment of the minimum prevailing wages established under "The New Jersey Prevailing Wage Act" N.J.S.A. 34:11-56 et al.

CONTRACTOR:

ADDRESS:

BY:

ORIGINAL SIGNATURE ONLY

STATE OF NEW JERSEY

COUNTY OF _____

Being by me duly sworn according to law, on his oath deposes and says that _____ is _____ of _____ the above named contractor, and that the facts set forth in the above statement are true.

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

Notary Public: _____

My Commission Expires: _____

* N.J.S.A. 34:11-56.33 requires the contractor and subcontractor to file written statements with the public body in form satisfactory to the Commissioner certifying to the amounts then due and owing from such contractor and subcontractor filing such statement to any and all workmen for wages due on account of the public work, setting forth therein the names of the persons whose wages are unpaid and the amount due to each respectively. Union County will withhold the amount so deducted for the benefit of the workmen whose wages are unpaid as shown by the verified statement filed, and will pay directly to any workman the amount shown by such statement to be due to him for such wages. Such payment shall thereby discharge the obligation of the contractor to the person receiving such payment to the extent of the amount thereof.

BIDDER'S NAME: _____

UNCOMPLETED CONTRACTS AFFIDAVIT
(To be submitted with DPMC Form 701)

PURSUANT TO N.J.A.C. 17:19-2.13, BIDDER DECLARES THE FOLLOWING WITH RESPECT TO ITS UNCOMPLETED CONTRACTS, ON ALL WORK, FROM WHATEVER SOURCE (PUBLIC AND PRIVATE), BOTH IN NEW JERSEY AND FROM OTHER GOVERNMENTAL JURISDICTIONS

ENTITY	PROJECT TITLE	ORIGINAL CONTRACT AMOUNT	UNCOMPLETED AMOUNT AS OF BID OPENING DATE	NAME AND TELEPHONE NUMBER OF PARTY TO BE CONTACTED FROM ENTITY FOR VERIFICATION

TOTAL AMOUNT OF UNCOMPLETED CONTRACTS \$ _____

Sworn and Subscribed to Before me

This _____ day of _____ 20____

Notary Public

BIDDER:

(Signature)

(Print Name)

NOTE: FAILURE TO COMPLETE AND SUBMIT THIS DOCUMENT WITH YOUR PROPOSAL MAY RESULT IN A REJECTION OF YOUR BID.

BIDDER'S NAME: _____

CERTIFICATE OF INSURANCE STATEMENT

The Bidder fully understands the County of Union insurance requirements as stated in the Instructions to Bidders as well as the Owner/Contractor Agreement and agrees to provide all insurance required by these documents prior to the issuance of the Notice to Proceed.

BIDDER (Signature)

BIDDER (Print Name)

NOTE: FAILURE TO COMPLETE AND SUBMIT THIS DOCUMENT WITH YOUR PROPOSAL MAY RESULT IN A REJECTION OF YOUR BID.

BIDDER'S NAME: _____

COLLECTION OF USE TAX ON SALES TO LOCAL GOVERNMENTS STATEMENT

The Bidder fully understands the requirements of the use tax on sales to local governments as stated in the General Conditions to the Contract for Construction and the Instructions to Bidders, and agrees at all times to comply with the "Contractor Use Tax Collection Legislation", as defined therein, and the terms relating thereto contained in the Contract Documents.

BIDDER (Signature)

BIDDER (Print Name)

NOTE: FAILURE TO COMPLETE AND SUBMIT THIS DOCUMENT WITH YOUR PROPOSAL MAY RESULT IN A REJECTION OF YOUR BID.

BIDDER'S NAME: _____

TIME OF COMPLETION

The undersigned proposed that if awarded the Contract, the scope of work will be started within ten (10) calendar days and will be substantially completed within **Two Hundred and Forty (240) calendar days** from the date of the notice to proceed.

I, _____ of _____
NAME (Print or type) COMPANY

Agree to complete work in the time frame specified _____
SIGNATURE

SITE VISIT – GENERAL CONTRACTOR

I, _____ of _____
NAME (Print or type) COMPANY

Visited the site of the work on _____
SIGNATURE

BIDDER'S NAME: _____

**COUNTY OF UNION NEW JERSEY
Division of Purchasing
DISCLOSURE OF INVESTMENT ACTIVITIES IN IRAN FORM**

Solicitation Number: _____

Vendor/Bidder: _____

PART 1

CERTIFICATION

VENDOR/BIDDER MUST COMPLETE PART 1 BY CHECKING ONE OF THE BOXES
FAILURE TO CHECK ONE OF THE BOXES WILL RENDER THE PROPOSAL NON-RESPONSIVE

Pursuant to Public Law 2012, c. 25, any person or entity that submits a bid or proposal or otherwise proposes to enter into or renew a contract must complete the certification below to attest, under penalty of perjury, that neither the person nor entity, nor any of its parents, subsidiaries, or affiliates, is identified on the State of New Jersey, Department of the Treasury's Chapter 25 list as a person or entity engaged in investment activities in Iran. The Chapter 25 list is found on the Department's website at <http://www.state.nj.us/treasury/pdf/Chapter25List.pdf>. Vendors/Bidders **must** review this list prior to completing the below certification. **Failure to complete the certification will render a Vendor's/Bidder's proposal non-responsive.** If the Director of the Division of Purchase and Property finds a person or entity to be in violation of the law, s/he shall take action as may be appropriate and provided by law, rule or contract, including but not limited to, imposing sanctions, seeking compliance, recovering damages, declaring the party in default and seeking debarment or suspension of the party.

CHECK THE APPROPRIATE BOX

A. I certify, pursuant to Public Law 2012, c.25, that neither the Vendor/Bidder listed above nor any of its parents, subsidiaries, or affiliates is listed on the N.J. Department of Treasury's list of entities determined to be engaged in prohibited activities in Iran pursuant to P.L. 2012, c. 25 ("Chapter 25 List"). Disregard Part 2 and complete and sign the Certification below.

OR

B. I am unable to certify as above because the Vendor/Bidder and/or one or more of its parents, subsidiaries, or affiliates is listed on the Department's Chapter 25 list. I will provide a detailed, accurate and precise description of the activities in Part 2 below and sign and complete the Certification below. Failure to provide such information will result in the proposal being rendered as non-responsive and appropriate penalties, fines and/or sanctions will be assessed as provided by law.

PART 2

PLEASE PROVIDE ADDITIONAL INFORMATION RELATED TO INVESTMENT ACTIVITIES IN IRAN

If you checked Box "B" above, provide a detailed, accurate and precise description of the activities of the Vendor/Bidder, or one of its parents, subsidiaries or affiliates, engaged in investment activities in Iran by completing the information below.

ENTITY NAME: _____
RELATIONSHIP TO VENDOR/BIDDER: _____
DESCRIPTION OF ACTIVITIES: _____
DURATION OF ENGAGEMENT: _____
ANTICIPATED CESSATION DATE: _____
VENDOR/BIDDER CONTACT NAME: _____
VENDOR/BIDDER CONTACT PHONE#: _____

Attach Additional Sheets If Necessary

CERTIFICATION

I, the undersigned, certify that I am authorized to execute this certification on behalf of the Vendor/Bidder, that the foregoing information and any attachments hereto, to the best of my knowledge are true and complete. I acknowledge that the County of Union, New Jersey is relying on the information contained herein, and that the Vendor/Bidder is under a continuing obligation from the date of this certification through the completion of any contract(s) with the County of Union to notify the County of Union in writing of any changes to the information contained herein; that I am aware that it is a criminal offense to make a false statement or misrepresentation in this certification. If I do so, I will be subject to criminal prosecution under the law, and it will constitute a material breach of my agreement(s) with the County of Union, permitting the County of Union to declare any contract(s) resulting from this certification void and unenforceable.

Signature

Date

Print Name and Title

Revised 10/19/17

STANDARD SPECIFICATIONS

The Standard Specifications for Road and Bridge Construction of New Jersey Department of Transportation, 2019 Edition; is added to and/or amended elsewhere herein by the Notice to Contractors (Advertisement), Proposal, Information for Bidders, General Conditions, Supplemental Conditions, Project Plans, and Supplementary Specifications; shall, insofar as technical requirements are involved, govern in the execution of this project.

Such Standard Specifications are made a part of these Specifications by this reference and will not be repeated herein. It is the responsibility of prospective bidders to familiarize themselves with these Standard Specifications, copies of which may be examined at the office of the Engineer and may be obtained, upon payment of the cost thereof, from:

Department of Transportation
State of New Jersey
1035 Parkway Avenue
Trenton, New Jersey 08625

The Notice to Contractors (Advertisement), Proposal, General Conditions, Special Provisions, Project Plans and/or Supplementary Specifications shall govern and prevail in the case of conflict between them and the Standard Specifications.

In these Standard Specifications the words "COMMISSIONER" or "DEPARTMENT" shall refer to and mean the person, persons, body, board or agent legally empowered to enter into contracts and otherwise legally act for the Owner. The word "STATE" shall refer to and mean the professional engineering representative of the Owner as hereinbefore defined and the word "ENGINEER" shall refer to and mean the professional engineering representative of the Owner as hereinbefore defined and the word "INSPECTOR" shall mean the authorized project representative of the Engineer with the authority as hereinbefore defined. The word "LABORATORY" shall mean and refer to the Engineer who may, at his discretion, and with the consent of the Owner, employ qualified technical personnel or testing laboratories to assist him in fulfilling the duties normally assigned to the "LABORATORY" in these Standard Specifications.

When reference is made herein to the bulletins, standards, specifications, publications or requirements of the American Association of State Highway Official (AASHO), the American Concrete Institute (ACI), the American Society of Civil Engineers (ASCE) or similar national or regional societies, associations, institutes or organizations; the requirements of the bulletins, specifications, publications or requirements referred to shall be considered a part of these Specifications by such reference and shall not be repeated herein but shall have the same import and be as binding as if herein set forth in full.



AIA® Document A101® – 2017

Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum

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

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

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

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

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

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

The parties should complete A101®–2017, Exhibit A, Insurance and Bonds, contemporaneously with this Agreement.

AIA Document A201®–2017, General Conditions of the Contract for Construction, is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

The Owner and Contractor agree as follows.

Init.

TABLE OF ARTICLES

- 1 THE CONTRACT DOCUMENTS
- 2 THE WORK OF THIS CONTRACT
- 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION
- 4 CONTRACT SUM
- 5 PAYMENTS
- 6 DISPUTE RESOLUTION
- 7 TERMINATION OR SUSPENSION
- 8 MISCELLANEOUS PROVISIONS
- 9 ENUMERATION OF CONTRACT DOCUMENTS

EXHIBIT A INSURANCE AND BONDS

ARTICLE 1 THE CONTRACT DOCUMENTS

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

ARTICLE 2 THE WORK OF THIS CONTRACT

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

ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 3.1 The date of commencement of the Work shall be:

(Check one of the following boxes.)

- The date of this Agreement.
- A date set forth in a notice to proceed issued by the Owner.
- Established as follows:
(Insert a date or a means to determine the date of commencement of the Work.)

If a date of commencement of the Work is not selected, then the date of commencement shall be the date of this Agreement.

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

§ 3.3 Substantial Completion

§ 3.3.1 Subject to adjustments of the Contract Time as provided in the Contract Documents, the Contractor shall achieve Substantial Completion of the entire Work:

(Check one of the following boxes and complete the necessary information.)

- Not later than () calendar days from the date of commencement of the Work.

By the following date:

§ 3.3.2 Subject to adjustments of the Contract Time as provided in the Contract Documents, if portions of the Work are to be completed prior to Substantial Completion of the entire Work, the Contractor shall achieve Substantial Completion of such portions by the following dates:

Portion of Work	Substantial Completion Date
-----------------	-----------------------------

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

ARTICLE 4 CONTRACT SUM

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

§ 4.2 Alternates

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

Item	Price
------	-------

§ 4.2.2 Subject to the conditions noted below, the following alternates may be accepted by the Owner following execution of this Agreement. Upon acceptance, the Owner shall issue a Modification to this Agreement. (Insert below each alternate and the conditions that must be met for the Owner to accept the alternate.)

Item	Price	Conditions for Acceptance
------	-------	---------------------------

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

Item	Price
------	-------

§ 4.4 Unit prices, if any:

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

Item	Units and Limitations	Price per Unit (\$0.00)
------	-----------------------	-------------------------

§ 4.5 Liquidated damages, if any:

(Insert terms and conditions for liquidated damages, if any.)

§ 4.6 Other:

(Insert provisions for bonus or other incentives, if any, that might result in a change to the Contract Sum.)

ARTICLE 5 PAYMENTS

§ 5.1 Progress Payments

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

§ 5.1.2 The period covered by each Application for Payment shall be one calendar month ending on the last day of the month, or as follows:

§ 5.1.3 Provided that an Application for Payment is received by the Architect not later than the day of a month, the Owner shall make payment of the amount certified to the Contractor not later than the day of the month. If an Application for Payment is received by the Architect after the application date fixed above, payment of the amount certified shall be made by the Owner not later than () days after the Architect receives the Application for Payment.

(Federal, state or local laws may require payment within a certain period of time.)

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

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

§ 5.1.6 In accordance with AIA Document A201™-2017, General Conditions of the Contract for Construction, and subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

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

- .1 That portion of the Contract Sum properly allocable to completed Work;
- .2 That portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction, or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing; and
- .3 That portion of Construction Change Directives that the Architect determines, in the Architect's professional judgment, to be reasonably justified.

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

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

§ 5.1.7 Retainage

§ 5.1.7.1 For each progress payment made prior to Substantial Completion of the Work, the Owner may withhold the following amount, as retainage, from the payment otherwise due:

(Insert a percentage or amount to be withheld as retainage from each Application for Payment. The amount of retainage may be limited by governing law.)

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

§ 5.1.7.2 Reduction or limitation of retainage, if any, shall be as follows:
(If the retainage established in Section 5.1.7.1 is to be modified prior to Substantial Completion of the entire Work, including modifications for Substantial Completion of portions of the Work as provided in Section 3.3.2, insert provisions for such modifications.)

§ 5.1.7.3 Except as set forth in this Section 5.1.7.3, upon Substantial Completion of the Work, the Contractor may submit an Application for Payment that includes the retainage withheld from prior Applications for Payment pursuant to this Section 5.1.7. The Application for Payment submitted at Substantial Completion shall not include retainage as follows:
(Insert any other conditions for release of retainage upon Substantial Completion.)

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

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

§ 5.2 Final Payment

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

- .1 the Contractor has fully performed the Contract except for the Contractor's responsibility to correct Work as provided in Article 12 of AIA Document A201-2017, and to satisfy other requirements, if any, which extend beyond final payment; and
- .2 a final Certificate for Payment has been issued by the Architect.

§ 5.2.2 The Owner's final payment to the Contractor shall be made no later than 30 days after the issuance of the Architect's final Certificate for Payment, or as follows:

§ 5.3 Interest

Payments due and unpaid under the Contract shall bear interest from the date payment is due at the rate stated below, or in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

(Insert rate of interest agreed upon, if any.)

_____ %

ARTICLE 6 DISPUTE RESOLUTION

§ 6.1 Initial Decision Maker

The Architect will serve as the Initial Decision Maker pursuant to Article 15 of AIA Document A201-2017, unless the parties appoint below another individual, not a party to this Agreement, to serve as the Initial Decision Maker.

(If the parties mutually agree, insert the name, address and other contact information of the Initial Decision Maker, if other than the Architect.)

§ 6.2 Binding Dispute Resolution

For any Claim subject to, but not resolved by, mediation pursuant to Article 15 of AIA Document A201–2017, the method of binding dispute resolution shall be as follows:

(Check the appropriate box.)

- Arbitration pursuant to Section 15.4 of AIA Document A201–2017
- Litigation in a court of competent jurisdiction
- Other *(Specify)*

If the Owner and Contractor do not select a method of binding dispute resolution, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, Claims will be resolved by litigation in a court of competent jurisdiction.

ARTICLE 7 TERMINATION OR SUSPENSION

§ 7.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A201–2017.

§ 7.1.1 If the Contract is terminated for the Owner's convenience in accordance with Article 14 of AIA Document A201–2017, then the Owner shall pay the Contractor a termination fee as follows:

(Insert the amount of, or method for determining, the fee, if any, payable to the Contractor following a termination for the Owner's convenience.)

§ 7.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A201–2017.

ARTICLE 8 MISCELLANEOUS PROVISIONS

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A201–2017 or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

§ 8.2 The Owner's representative:

(Name, address, email address, and other information)

§ 8.3 The Contractor's representative:

(Name, address, email address, and other information)

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

§ 8.5 Insurance and Bonds

§ 8.5.1 The Owner and the Contractor shall purchase and maintain insurance as set forth in AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum, Exhibit A, Insurance and Bonds, and elsewhere in the Contract Documents.

§ 8.5.2 The Contractor shall provide bonds as set forth in AIA Document A101™–2017 Exhibit A, and elsewhere in the Contract Documents.

§ 8.6 Notice in electronic format, pursuant to Article 1 of AIA Document A201–2017, may be given in accordance with AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, if completed, or as otherwise set forth below:

(If other than in accordance with AIA Document E203–2013, insert requirements for delivering notice in electronic format such as name, title, and email address of the recipient and whether and how the system will be required to generate a read receipt for the transmission.)

§ 8.7 Other provisions:

ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 This Agreement is comprised of the following documents:

- .1 AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor
- .2 AIA Document A101™–2017, Exhibit A, Insurance and Bonds
- .3 AIA Document A201™–2017, General Conditions of the Contract for Construction
- .4 AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, dated as indicated below:
(Insert the date of the E203-2013 incorporated into this Agreement.)

.5 Drawings

Number	Title	Date
--------	-------	------

.6 Specifications

Section	Title	Date	Pages
---------	-------	------	-------

.7 Addenda, if any:

Number	Date	Pages
--------	------	-------

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

.8 Other Exhibits:

(Check all boxes that apply and include appropriate information identifying the exhibit where required.)

- AIA Document E204™–2017, Sustainable Projects Exhibit, dated as indicated below:
(Insert the date of the E204-2017 incorporated into this Agreement.)

The Sustainability Plan:

Title	Date	Pages
-------	------	-------

Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages
----------	-------	------	-------

.9 Other documents, if any, listed below:

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

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

OWNER (Signature)

CONTRACTOR (Signature)

(Printed name and title)

(Printed name and title)



AIA® Document A201® – 2017

General Conditions of the Contract for Construction

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

THE OWNER:
(Name, legal status and address)

THE ARCHITECT:
(Name, legal status and address)

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

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

TABLE OF ARTICLES

- 1 GENERAL PROVISIONS
- 2 OWNER
- 3 CONTRACTOR
- 4 ARCHITECT
- 5 SUBCONTRACTORS
- 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS
- 7 CHANGES IN THE WORK
- 8 TIME
- 9 PAYMENTS AND COMPLETION
- 10 PROTECTION OF PERSONS AND PROPERTY
- 11 INSURANCE AND BONDS
- 12 UNCOVERING AND CORRECTION OF WORK
- 13 MISCELLANEOUS PROVISIONS
- 14 TERMINATION OR SUSPENSION OF THE CONTRACT
- 15 CLAIMS AND DISPUTES

INDEX

(Topics and numbers in bold are Section headings.)

Acceptance of Nonconforming Work

9.6.6, 9.9.3, **12.3**

Acceptance of Work

9.6.6, 9.8.2, 9.9.3, 9.10.1, 9.10.3, 12.3

Access to Work

3.16, 6.2.1, 12.1

Accident Prevention

10

Acts and Omissions

3.2, 3.3.2, 3.12.8, 3.18, 4.2.3, 8.3.1, 9.5.1, 10.2.5, 10.2.8, 13.3.2, 14.1, 15.1.2, 15.2

Addenda

1.1.1

Additional Costs, Claims for

3.7.4, 3.7.5, 10.3.2, 15.1.5

Additional Inspections and Testing

9.4.2, 9.8.3, 12.2.1, **13.4**

Additional Time, Claims for

3.2.4, 3.7.4, 3.7.5, 3.10.2, 8.3.2, **15.1.6**

Administration of the Contract

3.1.3, **4.2**, 9.4, 9.5

Advertisement or Invitation to Bid

1.1.1

Aesthetic Effect

4.2.13

Allowances

3.8

Applications for Payment

4.2.5, 7.3.9, 9.2, **9.3**, 9.4, 9.5.1, 9.5.4, 9.6.3, 9.7, 9.10

Approvals

2.1.1, 2.3.1, 2.5, 3.1.3, 3.10.2, 3.12.8, 3.12.9, 3.12.10.1, 4.2.7, 9.3.2, 13.4.1

Arbitration

8.3.1, 15.3.2, **15.4**

ARCHITECT

4

Architect, Definition of

4.1.1

Architect, Extent of Authority

2.5, 3.12.7, 4.1.2, 4.2, 5.2, 6.3, 7.1.2, 7.3.4, 7.4, 9.2, 9.3.1, 9.4, 9.5, 9.6.3, 9.8, 9.10.1, 9.10.3, 12.1, 12.2.1, 13.4.1, 13.4.2, 14.2.2, 14.2.4, 15.1.4, 15.2.1

Architect, Limitations of Authority and Responsibility

2.1.1, 3.12.4, 3.12.8, 3.12.10, 4.1.2, 4.2.1, 4.2.2, 4.2.3, 4.2.6, 4.2.7, 4.2.10, 4.2.12, 4.2.13, 5.2.1, 7.4, 9.4.2, 9.5.4, 9.6.4, 15.1.4, 15.2

Architect's Additional Services and Expenses

2.5, 12.2.1, 13.4.2, 13.4.3, 14.2.4

Architect's Administration of the Contract

3.1.3, 3.7.4, 15.2, 9.4.1, 9.5

Architect's Approvals

2.5, 3.1.3, 3.5, 3.10.2, 4.2.7

Architect's Authority to Reject Work

3.5, 4.2.6, 12.1.2, 12.2.1

Architect's Copyright

1.1.7, 1.5

Architect's Decisions

3.7.4, 4.2.6, 4.2.7, 4.2.11, 4.2.12, 4.2.13, 4.2.14, 6.3, 7.3.4, 7.3.9, 8.1.3, 8.3.1, 9.2, 9.4.1, 9.5, 9.8.4, 9.9.1, 13.4.2, 15.2

Architect's Inspections

3.7.4, 4.2.2, 4.2.9, 9.4.2, 9.8.3, 9.9.2, 9.10.1, 13.4

Architect's Instructions

3.2.4, 3.3.1, 4.2.6, 4.2.7, 13.4.2

Architect's Interpretations

4.2.11, 4.2.12

Architect's Project Representative

4.2.10

Architect's Relationship with Contractor

1.1.2, 1.5, 2.3.3, 3.1.3, 3.2.2, 3.2.3, 3.2.4, 3.3.1, 3.4.2, 3.5, 3.7.4, 3.7.5, 3.9.2, 3.9.3, 3.10, 3.11, 3.12, 3.16, 3.18, 4.1.2, 4.2, 5.2, 6.2.2, 7, 8.3.1, 9.2, 9.3, 9.4, 9.5, 9.7, 9.8, 9.9, 10.2.6, 10.3, 11.3, 12, 13.3.2, 13.4, 15.2

Architect's Relationship with Subcontractors

1.1.2, 4.2.3, 4.2.4, 4.2.6, 9.6.3, 9.6.4, 11.3

Architect's Representations

9.4.2, 9.5.1, 9.10.1

Architect's Site Visits

3.7.4, 4.2.2, 4.2.9, 9.4.2, 9.5.1, 9.9.2, 9.10.1, 13.4

Asbestos

10.3.1

Attorneys' Fees

3.18.1, 9.6.8, 9.10.2, 10.3.3

Award of Separate Contracts

6.1.1, 6.1.2

Award of Subcontracts and Other Contracts for Portions of the Work

5.2

Basic Definitions

1.1

Bidding Requirements

1.1.1

Binding Dispute Resolution

8.3.1, 9.7, 11.5, 13.1, 15.1.2, 15.1.3, 15.2.1, 15.2.5, 15.2.6.1, 15.3.1, 15.3.2, 15.3.3, 15.4.1

Bonds, Lien

7.3.4.4, 9.6.8, 9.10.2, 9.10.3

Bonds, Performance, and Payment

7.3.4.4, 9.6.7, 9.10.3, **11.1.2**, 11.1.3, **11.5**

Building Information Models Use and Reliance

1.8

Building Permit

3.7.1

Capitalization

1.3

Certificate of Substantial Completion

9.8.3, 9.8.4, 9.8.5

Certificates for Payment

4.2.1, 4.2.5, 4.2.9, 9.3.3, 9.4, 9.5, 9.6.1, 9.6.6, 9.7, 9.10.1, 9.10.3, 14.1.1.3, 14.2.4, 15.1.4

Certificates of Inspection, Testing or Approval

13.4.4

Certificates of Insurance

9.10.2

Change Orders

1.1.1, 3.4.2, 3.7.4, 3.8.2.3, 3.11, 3.12.8, 4.2.8, 5.2.3,
7.1.2, 7.1.3, 7.2, 7.3.2, 7.3.7, 7.3.9, 7.3.10, 8.3.1,
9.3.1.1, 9.10.3, 10.3.2, 11.2, 11.5, 12.1.2

Change Orders, Definition of
7.2.1

CHANGES IN THE WORK

2.2.2, 3.11, 4.2.8, 7, 7.2.1, 7.3.1, 7.4, 8.3.1, 9.3.1.1,
11.5

Claims, Definition of

15.1.1

Claims, Notice of

1.6.2, 15.1.3

CLAIMS AND DISPUTES

3.2.4, 6.1.1, 6.3, 7.3.9, 9.3.3, 9.10.4, 10.3.3, 15, 15.4

Claims and Timely Assertion of Claims

15.4.1

Claims for Additional Cost

3.2.4, 3.3.1, 3.7.4, 7.3.9, 9.5.2, 10.2.5, 10.3.2, 15.1.5

Claims for Additional Time

3.2.4, 3.3.1, 3.7.4, 6.1.1, 8.3.2, 9.5.2, 10.3.2, 15.1.6

Concealed or Unknown Conditions, Claims for
3.7.4

Claims for Damages

3.2.4, 3.18, 8.3.3, 9.5.1, 9.6.7, 10.2.5, 10.3.3, 11.3,
11.3.2, 14.2.4, 15.1.7

Claims Subject to Arbitration

15.4.1

Cleaning Up

3.15, 6.3

Commencement of the Work, Conditions Relating to

2.2.1, 3.2.2, 3.4.1, 3.7.1, 3.10.1, 3.12.6, 5.2.1, 5.2.3,
6.2.2, 8.1.2, 8.2.2, 8.3.1, 11.1, 11.2, 15.1.5

Commencement of the Work, Definition of
8.1.2

Communications

3.9.1, 4.2.4

Completion, Conditions Relating to

3.4.1, 3.11, 3.15, 4.2.2, 4.2.9, 8.2, 9.4.2, 9.8, 9.9.1,
9.10, 12.2, 14.1.2, 15.1.2

COMPLETION, PAYMENTS AND
9

Completion, Substantial

3.10.1, 4.2.9, 8.1.1, 8.1.3, 8.2.3, 9.4.2, 9.8, 9.9.1,
9.10.3, 12.2, 15.1.2

Compliance with Laws

2.3.2, 3.2.3, 3.6, 3.7, 3.12.10, 3.13, 9.6.4, 10.2.2, 13.1,
13.3, 13.4.1, 13.4.2, 13.5, 14.1.1, 14.2.1.3, 15.2.8,
15.4.2, 15.4.3

Concealed or Unknown Conditions

3.7.4, 4.2.8, 8.3.1, 10.3

Conditions of the Contract

1.1.1, 6.1.1, 6.1.4

Consent, Written

3.4.2, 3.14.2, 4.1.2, 9.8.5, 9.9.1, 9.10.2, 9.10.3, 13.2,
15.4.4.2

Consolidation or Joinder

15.4.4

**CONSTRUCTION BY OWNER OR BY
SEPARATE CONTRACTORS**

1.1.4, 6

Construction Change Directive, Definition of
7.3.1

Construction Change Directives

1.1.1, 3.4.2, 3.11, 3.12.8, 4.2.8, 7.1.1, 7.1.2, 7.1.3, 7.3,
9.3.1.1

Construction Schedules, Contractor's

3.10, 3.11, 3.12.1, 3.12.2, 6.1.3, 15.1.6.2

Contingent Assignment of Subcontracts

5.4, 14.2.2.2

Continuing Contract Performance

15.1.4

Contract, Definition of

1.1.2

**CONTRACT, TERMINATION OR SUSPENSION
OF THE**

5.4.1.1, 5.4.2, 11.5, 14

Contract Administration

3.1.3, 4, 9.4, 9.5

Contract Award and Execution, Conditions Relating to

3.7.1, 3.10, 5.2, 6.1

Contract Documents, Copies Furnished and Use of

1.5.2, 2.3.6, 5.3

Contract Documents, Definition of

1.1.1

Contract Sum

2.2.2, 2.2.4, 3.7.4, 3.7.5, 3.8, 3.10.2, 5.2.3, 7.3, 7.4, 9.1,
9.2, 9.4.2, 9.5.1.4, 9.6.7, 9.7, 10.3.2, 11.5, 12.1.2, 12.3,
14.2.4, 14.3.2, 15.1.4.2, 15.1.5, 15.2.5

Contract Sum, Definition of

9.1

Contract Time

1.1.4, 2.2.1, 2.2.2, 3.7.4, 3.7.5, 3.10.2, 5.2.3, 6.1.5,
7.2.1.3, 7.3.1, 7.3.5, 7.3.6, 7, 7, 7.3.10, 7.4, 8.1.1, 8.2.1,
8.2.3, 8.3.1, 9.5.1, 9.7, 10.3.2, 12.1.1, 12.1.2, 14.3.2,
15.1.4.2, 15.1.6.1, 15.2.5

Contract Time, Definition of

8.1.1

CONTRACTOR

3

Contractor, Definition of

3.1, 6.1.2

Contractor's Construction and Submittal Schedules

3.10, 3.12.1, 3.12.2, 4.2.3, 6.1.3, 15.1.6.2

Contractor's Employees

2.2.4, 3.3.2, 3.4.3, 3.8.1, 3.9, 3.18.2, 4.2.3, 4.2.6, 10.2,
10.3, 11.3, 14.1, 14.2.1.1

Contractor's Liability Insurance

11.1

Contractor's Relationship with Separate Contractors
and Owner's Forces

3.12.5, 3.14.2, 4.2.4, 6, 11.3, 12.2.4

Contractor's Relationship with Subcontractors
1.2.2, 2.2.4, 3.3.2, 3.18.1, 3.18.2, 4.2.4, 5, 9.6.2, 9.6.7, 9.10.2, 11.2, 11.3, 11.4

Contractor's Relationship with the Architect
1.1.2, 1.5, 2.3.3, 3.1.3, 3.2.2, 3.2.3, 3.2.4, 3.3.1, 3.4.2, 3.5.1, 3.7.4, 3.10, 3.11, 3.12, 3.16, 3.18, 4.2, 5.2, 6.2.2, 7, 8.3.1, 9.2, 9.3, 9.4, 9.5, 9.7, 9.8, 9.9, 10.2.6, 10.3, 11.3, 12, 13.4, 15.1.3, 15.2.1

Contractor's Representations
3.2.1, 3.2.2, 3.5, 3.12.6, 6.2.2, 8.2.1, 9.3.3, 9.8.2

Contractor's Responsibility for Those Performing the Work
3.3.2, 3.18, 5.3, 6.1.3, 6.2, 9.5.1, 10.2.8

Contractor's Review of Contract Documents
3.2

Contractor's Right to Stop the Work
2.2.2, 9.7

Contractor's Right to Terminate the Contract
14.1

Contractor's Submittals
3.10, 3.11, 3.12, 4.2.7, 5.2.1, 5.2.3, 9.2, 9.3, 9.8.2, 9.8.3, 9.9.1, 9.10.2, 9.10.3

Contractor's Superintendent
3.9, 10.2.6

Contractor's Supervision and Construction Procedures
1.2.2, 3.3, 3.4, 3.12.10, 4.2.2, 4.2.7, 6.1.3, 6.2.4, 7.1.3, 7.3.4, 7.3.6, 8.2, 10, 12, 14, 15.1.4

Coordination and Correlation
1.2, 3.2.1, 3.3.1, 3.10, 3.12.6, 6.1.3, 6.2.1

Copies Furnished of Drawings and Specifications
1.5, 2.3.6, 3.11

Copyrights
1.5, 3.17

Correction of Work
2.5, 3.7.3, 9.4.2, 9.8.2, 9.8.3, 9.9.1, 12.1.2, 12.2, 12.3, 15.1.3.1, 15.1.3.2, 15.2.1

Correlation and Intent of the Contract Documents
1.2

Cost, Definition of
7.3.4

Costs
2.5, 3.2.4, 3.7.3, 3.8.2, 3.15.2, 5.4.2, 6.1.1, 6.2.3, 7.3.3.3, 7.3.4, 7.3.8, 7.3.9, 9.10.2, 10.3.2, 10.3.6, 11.2, 12.1.2, 12.2.1, 12.2.4, 13.4, 14

Cutting and Patching
3.14, 6.2.5

Damage to Construction of Owner or Separate Contractors
3.14.2, 6.2.4, 10.2.1.2, 10.2.5, 10.4, 12.2.4

Damage to the Work
3.14.2, 9.9.1, 10.2.1.2, 10.2.5, 10.4, 12.2.4

Damages, Claims for
3.2.4, 3.18, 6.1.1, 8.3.3, 9.5.1, 9.6.7, 10.3.3, 11.3.2, 11.3, 14.2.4, 15.1.7

Damages for Delay
6.2.3, 8.3.3, 9.5.1.6, 9.7, 10.3.2, 14.3.2

Date of Commencement of the Work, Definition of
8.1.2

Date of Substantial Completion, Definition of
8.1.3

Day, Definition of
8.1.4

Decisions of the Architect
3.7.4, 4.2.6, 4.2.7, 4.2.11, 4.2.12, 4.2.13, 6.3, 7.3.4, 7.3.9, 8.1.3, 8.3.1, 9.2, 9.4, 9.5.1, 9.8.4, 9.9.1, 13.4.2, 14.2.2, 14.2.4, 15.1, 15.2

Decisions to Withhold Certification
9.4.1, 9.5, 9.7, 14.1.1.3

Defective or Nonconforming Work, Acceptance, Rejection and Correction of
2.5, 3.5, 4.2.6, 6.2.3, 9.5.1, 9.5.3, 9.6.6, 9.8.2, 9.9.3, 9.10.4, 12.2.1

Definitions
1.1, 2.1.1, 3.1.1, 3.5, 3.12.1, 3.12.2, 3.12.3, 4.1.1, 5.1, 6.1.2, 7.2.1, 7.3.1, 8.1, 9.1, 9.8.1, 15.1.1

Delays and Extensions of Time
3.2, 3.7.4, 5.2.3, 7.2.1, 7.3.1, 7.4, 8.3, 9.5.1, 9.7, 10.3.2, 10.4, 14.3.2, 15.1.6, 15.2.5

Digital Data Use and Transmission
1.7

Disputes
6.3, 7.3.9, 15.1, 15.2

Documents and Samples at the Site
3.11

Drawings, Definition of
1.1.5

Drawings and Specifications, Use and Ownership of
3.11

Effective Date of Insurance
8.2.2

Emergencies
10.4, 14.1.1.2, 15.1.5

Employees, Contractor's
3.3.2, 3.4.3, 3.8.1, 3.9, 3.18.2, 4.2.3, 4.2.6, 10.2, 10.3.3, 11.3, 14.1, 14.2.1.1

Equipment, Labor, or Materials
1.1.3, 1.1.6, 3.4, 3.5, 3.8.2, 3.8.3, 3.12, 3.13, 3.15.1, 4.2.6, 4.2.7, 5.2.1, 6.2.1, 7.3.4, 9.3.2, 9.3.3, 9.5.1.3, 9.10.2, 10.2.1, 10.2.4, 14.2.1.1, 14.2.1.2

Execution and Progress of the Work
1.1.3, 1.2.1, 1.2.2, 2.3.4, 2.3.6, 3.1, 3.3.1, 3.4.1, 3.7.1, 3.10.1, 3.12, 3.14, 4.2, 6.2.2, 7.1.3, 7.3.6, 8.2, 9.5.1, 9.9.1, 10.2, 10.3, 12.1, 12.2, 14.2, 14.3.1, 15.1.4

Extensions of Time
3.2.4, 3.7.4, 5.2.3, 7.2.1, 7.3, 7.4, 9.5.1, 9.7, 10.3.2, 10.4, 14.3, 15.1.6, 15.2.5

Failure of Payment
9.5.1.3, 9.7, 9.10.2, 13.5, 14.1.1.3, 14.2.1.2

Faulty Work
(See Defective or Nonconforming Work)

Final Completion and Final Payment
4.2.1, 4.2.9, 9.8.2, 9.10, 12.3, 14.2.4, 14.4.3

Financial Arrangements, Owner's
2.2.1, 13.2.2, 14.1.1.4

GENERAL PROVISIONS
1

Governing Law

13.1

Guarantees (See Warranty)

Hazardous Materials and Substances

10.2.4, 10.3

Identification of Subcontractors and Suppliers

5.2.1

Indemnification

3.17, **3.18**, 9.6.8, 9.10.2, 10.3.3, 11.3

Information and Services Required of the Owner

2.1.2, **2.2**, 2.3, 3.2.2, 3.12.10.1, 6.1.3, 6.1.4, 6.2.5,

9.6.1, 9.9.2, 9.10.3, 10.3.3, 11.2, 13.4.1, 13.4.2,

14.1.1.4, 14.1.4, 15.1.4

Initial Decision

15.2

Initial Decision Maker, Definition of

1.1.8

Initial Decision Maker, Decisions

14.2.4, 15.1.4.2, 15.2.1, 15.2.2, 15.2.3, 15.2.4, 15.2.5

Initial Decision Maker, Extent of Authority

14.2.4, 15.1.4.2, 15.2.1, 15.2.2, 15.2.3, 15.2.4, 15.2.5

Injury or Damage to Person or Property

10.2.8, 10.4

Inspections

3.1.3, 3.3.3, 3.7.1, 4.2.2, 4.2.6, 4.2.9, 9.4.2, 9.8.3, 9.9.2,

9.10.1, 12.2.1, 13.4

Instructions to Bidders

1.1.1

Instructions to the Contractor

3.2.4, 3.3.1, 3.8.1, 5.2.1, 7, 8.2.2, 12, 13.4.2

Instruments of Service, Definition of

1.1.7

Insurance

6.1.1, 7.3.4, 8.2.2, 9.3.2, 9.8.4, 9.9.1, 9.10.2, 10.2.5, **11**

Insurance, Notice of Cancellation or Expiration

11.1.4, 11.2.3

Insurance, Contractor's Liability

11.1

Insurance, Effective Date of

8.2.2, 14.4.2

Insurance, Owner's Liability

11.2

Insurance, Property

10.2.5, 11.2, 11.4, 11.5

Insurance, Stored Materials

9.3.2

INSURANCE AND BONDS

11

Insurance Companies, Consent to Partial Occupancy

9.9.1

Insured loss, Adjustment and Settlement of

11.5

Intent of the Contract Documents

1.2.1, 4.2.7, 4.2.12, 4.2.13

Interest

13.5

Interpretation

1.1.8, 1.2.3, **1.4**, 4.1.1, 5.1, 6.1.2, 15.1.1

Interpretations, Written

4.2.11, 4.2.12

Judgment on Final Award

15.4.2

Labor and Materials, Equipment

1.1.3, 1.1.6, **3.4**, 3.5, 3.8.2, 3.8.3, 3.12, 3.13, 3.15.1,

5.2.1, 6.2.1, 7.3.4, 9.3.2, 9.3.3, 9.5.1.3, 9.10.2, 10.2.1,

10.2.4, 14.2.1.1, 14.2.1.2

Labor Disputes

8.3.1

Laws and Regulations

1.5, 2.3.2, 3.2.3, 3.2.4, 3.6, 3.7, 3.12.10, 3.13, 9.6.4,

9.9.1, 10.2.2, 13.1, 13.3.1, 13.4.2, 13.5, 14, 15.2.8, 15.4

Liens

2.1.2, 9.3.1, 9.3.3, 9.6.8, 9.10.2, 9.10.4, 15.2.8

Limitations, Statutes of

12.2.5, 15.1.2, 15.4.1.1

Limitations of Liability

3.2.2, 3.5, 3.12.10, 3.12.10.1, 3.17, 3.18.1, 4.2.6, 4.2.7,

6.2.2, 9.4.2, 9.6.4, 9.6.7, 9.6.8, 10.2.5, 10.3.3, 11.3,

12.2.5, 13.3.1

Limitations of Time

2.1.2, **2.2**, 2.5, 3.2.2, 3.10, 3.11, 3.12.5, 3.15.1, 4.2.7,

5.2, 5.3, 5.4.1, 6.2.4, 7.3, 7.4, 8.2, 9.2, 9.3.1, 9.3.3,

9.4.1, 9.5, 9.6, 9.7, 9.8, 9.9, 9.10, 12.2, 13.4, 14, 15,

15.1.2, 15.1.3, 15.1.5

Materials, Hazardous

10.2.4, 10.3

Materials, Labor, Equipment and

1.1.3, 1.1.6, 3.4.1, 3.5, 3.8.2, 3.8.3, 3.12, 3.13, 3.15.1,

5.2.1, 6.2.1, 7.3.4, 9.3.2, 9.3.3, 9.5.1.3, 9.10.2, 10.2.1.2,

10.2.4, 14.2.1.1, 14.2.1.2

Means, Methods, Techniques, Sequences and

Procedures of Construction

3.3.1, 3.12.10, 4.2.2, 4.2.7, 9.4.2

Mechanic's Lien

2.1.2, 9.3.1, 9.3.3, 9.6.8, 9.10.2, 9.10.4, 15.2.8

Mediation

8.3.1, 15.1.3.2, 15.2.1, 15.2.5, 15.2.6, **15.3**, 15.4.1,

15.4.1.1

Minor Changes in the Work

1.1.1, 3.4.2, 3.12.8, 4.2.8, 7.1, 7.4

MISCELLANEOUS PROVISIONS

13

Modifications, Definition of

1.1.1

Modifications to the Contract

1.1.1, 1.1.2, 2.5, 3.11, 4.1.2, 4.2.1, 5.2.3, 7, 8.3.1, 9.7,

10.3.2

Mutual Responsibility

6.2

Nonconforming Work, Acceptance of

9.6.6, 9.9.3, **12.3**

Nonconforming Work, Rejection and Correction of

2.4, 2.5, 3.5, 4.2.6, 6.2.4, 9.5.1, 9.8.2, 9.9.3, 9.10.4,

12.2

Notice

1.6, 1.6.1, 1.6.2, 2.1.2, 2.2.2., 2.2.3, 2.2.4, 2.5, 3.2.4, 3.3.1, 3.7.4, 3.7.5, 3.9.2, 3.12.9, 3.12.10, 5.2.1, 7.4, 8.2.2, 9.6.8, 9.7, 9.10.1, 10.2.8, 10.3.2, 11.5, 12.2.2.1, 13.4.1, 13.4.2, 14.1, 14.2.2, 14.4.2, 15.1.3, 15.1.5, 15.1.6, 15.4.1

Notice of Cancellation or Expiration of Insurance
11.1.4, 11.2.3

Notice of Claims

1.6.2, 2.1.2, 3.7.4, 9.6.8, 10.2.8, 15.1.3, 15.1.5, 15.1.6, 15.2.8, 15.3.2, 15.4.1

Notice of Testing and Inspections

13.4.1, 13.4.2

Observations, Contractor's

3.2, 3.7.4

Occupancy

2.3.1, 9.6.6, 9.8

Orders, Written

1.1.1, 2.4, 3.9.2, 7, 8.2.2, 11.5, 12.1, 12.2.2.1, 13.4.2, 14.3.1

OWNER

2

Owner, Definition of

2.1.1

Owner, Evidence of Financial Arrangements

2.2, 13.2.2, 14.1.1.4

Owner, Information and Services Required of the

2.1.2, 2.2, 2.3, 3.2.2, 3.12.10, 6.1.3, 6.1.4, 6.2.5, 9.3.2, 9.6.1, 9.6.4, 9.9.2, 9.10.3, 10.3.3, 11.2, 13.4.1, 13.4.2, 14.1.1.4, 14.1.4, 15.1.4

Owner's Authority

1.5, 2.1.1, 2.3.32.4, 2.5, 3.4.2, 3.8.1, 3.12.10, 3.14.2, 4.1.2, 4.2.4, 4.2.9, 5.2.1, 5.2.4, 5.4.1, 6.1, 6.3, 7.2.1, 7.3.1, 8.2.2, 8.3.1, 9.3.2, 9.5.1, 9.6.4, 9.9.1, 9.10.2, 10.3.2, 11.4, 11.5, 12.2.2, 12.3, 13.2.2, 14.3, 14.4, 15.2.7

Owner's Insurance

11.2

Owner's Relationship with Subcontractors

1.1.2, 5.2, 5.3, 5.4, 9.6.4, 9.10.2, 14.2.2

Owner's Right to Carry Out the Work

2.5, 14.2.2

Owner's Right to Clean Up

6.3

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

6.1

Owner's Right to Stop the Work

2.4

Owner's Right to Suspend the Work

14.3

Owner's Right to Terminate the Contract

14.2, 14.4

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

1.1.1, 1.1.6, 1.1.7, 1.5, 2.3.6, 3.2.2, 3.11, 3.17, 4.2.12, 5.3

Partial Occupancy or Use

9.6.6, 9.9

Patching, Cutting and

3.14, 6.2.5

Patents

3.17

Payment, Applications for

4.2.5, 7.3.9, 9.2, 9.3, 9.4, 9.5, 9.6.3, 9.7, 9.8.5, 9.10.1, 14.2.3, 14.2.4, 14.4.3

Payment, Certificates for

4.2.5, 4.2.9, 9.3.3, 9.4, 9.5, 9.6.1, 9.6.6, 9.7, 9.10.1, 9.10.3, 14.1.1.3, 14.2.4

Payment, Failure of

9.5.1.3, 9.7, 9.10.2, 13.5, 14.1.1.3, 14.2.1.2

Payment, Final

4.2.1, 4.2.9, 9.10, 12.3, 14.2.4, 14.4.3

Payment Bond, Performance Bond and

7.3.4.4, 9.6.7, 9.10.3, 11.1.2

Payments, Progress

9.3, 9.6, 9.8.5, 9.10.3, 14.2.3, 15.1.4

PAYMENTS AND COMPLETION

9

Payments to Subcontractors

5.4.2, 9.5.1.3, 9.6.2, 9.6.3, 9.6.4, 9.6.7, 14.2.1.2

PCB

10.3.1

Performance Bond and Payment Bond

7.3.4.4, 9.6.7, 9.10.3, 11.1.2

Permits, Fees, Notices and Compliance with Laws

2.3.1, 3.7, 3.13, 7.3.4.4, 10.2.2

PERSONS AND PROPERTY, PROTECTION OF

10

Polychlorinated Biphenyl

10.3.1

Product Data, Definition of

3.12.2

Product Data and Samples, Shop Drawings

3.11, 3.12, 4.2.7

Progress and Completion

4.2.2, 8.2, 9.8, 9.9.1, 14.1.4, 15.1.4

Progress Payments

9.3, 9.6, 9.8.5, 9.10.3, 14.2.3, 15.1.4

Project, Definition of

1.1.4

Project Representatives

4.2.10

Property Insurance

10.2.5, 11.2

Proposal Requirements

1.1.1

PROTECTION OF PERSONS AND PROPERTY

10

Regulations and Laws

1.5, 2.3.2, 3.2.3, 3.6, 3.7, 3.12.10, 3.13, 9.6.4, 9.9.1, 10.2.2, 13.1, 13.3, 13.4.1, 13.4.2, 13.5, 14, 15.2.8, 15.4

Rejection of Work

4.2.6, 12.2.1

Releases and Waivers of Liens
 9.3.1, 9.10.2
Representations
 3.2.1, 3.5, 3.12.6, 8.2.1, 9.3.3, 9.4.2, 9.5.1, 9.10.1
Representatives
 2.1.1, 3.1.1, 3.9, 4.1.1, 4.2.10, 13.2.1
Responsibility for Those Performing the Work
 3.3.2, 3.18, 4.2.2, 4.2.3, 5.3, 6.1.3, 6.2, 6.3, 9.5.1, 10
Retainage
 9.3.1, 9.6.2, 9.8.5, 9.9.1, 9.10.2, 9.10.3
Review of Contract Documents and Field Conditions by Contractor
 3.2, 3.12.7, 6.1.3
Review of Contractor's Submittals by Owner and Architect
 3.10.1, 3.10.2, 3.11, 3.12, 4.2, 5.2, 6.1.3, 9.2, 9.8.2
Review of Shop Drawings, Product Data and Samples by Contractor
 3.12
Rights and Remedies
 1.1.2, 2.4, 2.5, 3.5, 3.7.4, 3.15.2, 4.2.6, 5.3, 5.4, 6.1, 6.3, 7.3.1, 8.3, 9.5.1, 9.7, 10.2.5, 10.3, 12.2.1, 12.2.2, 12.2.4, 13.3, 14, 15.4
Royalties, Patents and Copyrights
 3.17
Rules and Notices for Arbitration
 15.4.1
Safety of Persons and Property
 10.2, 10.4
Safety Precautions and Programs
 3.3.1, 4.2.2, 4.2.7, 5.3, 10.1, 10.2, 10.4
Samples, Definition of
 3.12.3
Samples, Shop Drawings, Product Data and
 3.11, 3.12, 4.2.7
Samples at the Site, Documents and
 3.11
Schedule of Values
 9.2, 9.3.1
Schedules, Construction
 3.10, 3.12.1, 3.12.2, 6.1.3, 15.1.6.2
Separate Contracts and Contractors
 1.1.4, 3.12.5, 3.14.2, 4.2.4, 4.2.7, 6, 8.3.1, 12.1.2
Separate Contractors, Definition of
 6.1.1
Shop Drawings, Definition of
 3.12.1
Shop Drawings, Product Data and Samples
 3.11, 3.12, 4.2.7
Site, Use of
 3.13, 6.1.1, 6.2.1
Site Inspections
 3.2.2, 3.3.3, 3.7.1, 3.7.4, 4.2, 9.9.2, 9.4.2, 9.10.1, 13.4
Site Visits, Architect's
 3.7.4, 4.2.2, 4.2.9, 9.4.2, 9.5.1, 9.9.2, 9.10.1, 13.4
Special Inspections and Testing
 4.2.6, 12.2.1, 13.4

Specifications, Definition of
 1.1.6
Specifications
 1.1.1, 1.1.6, 1.2.2, 1.5, 3.12.10, 3.17, 4.2.14
Statute of Limitations
 15.1.2, 15.4.1.1
Stopping the Work
 2.2.2, 2.4, 9.7, 10.3, 14.1
Stored Materials
 6.2.1, 9.3.2, 10.2.1.2, 10.2.4
Subcontractor, Definition of
 5.1.1
SUBCONTRACTORS
 5
Subcontractors, Work by
 1.2.2, 3.3.2, 3.12.1, 3.18, 4.2.3, 5.2.3, 5.3, 5.4, 9.3.1.2, 9.6.7
Subcontractual Relations
 5.3, 5.4, 9.3.1.2, 9.6, 9.10, 10.2.1, 14.1, 14.2.1
Submittals
 3.10, 3.11, 3.12, 4.2.7, 5.2.1, 5.2.3, 7.3.4, 9.2, 9.3, 9.8, 9.9.1, 9.10.2, 9.10.3
Submittal Schedule
 3.10.2, 3.12.5, 4.2.7
Subrogation, Waivers of
 6.1.1, 11.3
Substances, Hazardous
 10.3
Substantial Completion
 4.2.9, 8.1.1, 8.1.3, 8.2.3, 9.4.2, 9.8, 9.9.1, 9.10.3, 12.2, 15.1.2
Substantial Completion, Definition of
 9.8.1
Substitution of Subcontractors
 5.2.3, 5.2.4
Substitution of Architect
 2.3.3
Substitutions of Materials
 3.4.2, 3.5, 7.3.8
Sub-subcontractor, Definition of
 5.1.2
Subsurface Conditions
 3.7.4
Successors and Assigns
 13.2
Superintendent
 3.9, 10.2.6
Supervision and Construction Procedures
 1.2.2, 3.3, 3.4, 3.12.10, 4.2.2, 4.2.7, 6.1.3, 6.2.4, 7.1.3, 7.3.4, 8.2, 8.3.1, 9.4.2, 10, 12, 14, 15.1.4
Suppliers
 1.5, 3.12.1, 4.2.4, 4.2.6, 5.2.1, 9.3, 9.4.2, 9.5.4, 9.6, 9.10.5, 14.2.1
Surety
 5.4.1.2, 9.6.8, 9.8.5, 9.10.2, 9.10.3, 11.1.2, 14.2.2, 15.2.7
Surety, Consent of
 9.8.5, 9.10.2, 9.10.3

Surveys
1.1.7, 2.3.4
Suspension by the Owner for Convenience
14.3
Suspension of the Work
3.7.5, 5.4.2, 14.3
Suspension or Termination of the Contract
5.4.1.1, 14
Taxes
3.6, 3.8.2.1, 7.3.4.4
Termination by the Contractor
14.1, 15.1.7
Termination by the Owner for Cause
5.4.1.1, **14.2, 15.1.7**
Termination by the Owner for Convenience
14.4
Termination of the Architect
2.3.3
Termination of the Contractor Employment
14.2.2

TERMINATION OR SUSPENSION OF THE CONTRACT

14

Tests and Inspections

3.1.3, 3.3.3, 3.7.1, 4.2.2, 4.2.6, 4.2.9, 9.4.2, 9.8.3, 9.9.2, 9.10.1, 10.3.2, 12.2.1, **13.4**

TIME

8

Time, Delays and Extensions of

3.2.4, 3.7.4, 5.2.3, 7.2.1, 7.3.1, 7.4, **8.3, 9.5.1, 9.7, 10.3.2, 10.4, 14.3.2, 15.1.6, 15.2.5**

Time Limits

2.1.2, 2.2, 2.5, 3.2.2, 3.10, 3.11, 3.12.5, 3.15.1, 4.2, 5.2, 5.3, 5.4, 6.2.4, 7.3, 7.4, 8.2, 9.2, 9.3.1, 9.3.3, 9.4.1, 9.5, 9.6, 9.7, 9.8, 9.9, 9.10, 12.2, 13.4, 14, 15.1.2, 15.1.3, 15.4

Time Limits on Claims

3.7.4, 10.2.8, 15.1.2, 15.1.3

Title to Work

9.3.2, 9.3.3

UNCOVERING AND CORRECTION OF WORK

12

Uncovering of Work

12.1

Unforeseen Conditions, Concealed or Unknown

3.7.4, 8.3.1, 10.3

Unit Prices

7.3.3.2, 9.1.2

Use of Documents

1.1.1, 1.5, 2.3.6, 3.12.6, 5.3

Use of Site

3.13, 6.1.1, 6.2.1

Values, Schedule of

9.2, 9.3.1

Waiver of Claims by the Architect

13.3.2

Waiver of Claims by the Contractor

9.10.5, 13.3.2, **15.1.7**

Waiver of Claims by the Owner

9.9.3, 9.10.3, 9.10.4, 12.2.2.1, 13.3.2, 14.2.4, **15.1.7**

Waiver of Consequential Damages

14.2.4, 15.1.7

Waiver of Liens

9.3, 9.10.2, 9.10.4

Waivers of Subrogation

6.1.1, **11.3**

Warranty

3.5, 4.2.9, 9.3.3, 9.8.4, 9.9.1, 9.10.2, 9.10.4, 12.2.2, 15.1.2

Weather Delays

8.3, 15.1.6.2

Work, Definition of

1.1.3

Written Consent

1.5.2, 3.4.2, 3.7.4, 3.12.8, 3.14.2, 4.1.2, 9.3.2, 9.10.3, 13.2, 13.3.2, 15.4.4.2

Written Interpretations

4.2.11, 4.2.12

Written Orders

1.1.1, 2.4, 3.9, 7, 8.2.2, 12.1, 12.2, 13.4.2, 14.3.1

ARTICLE 1 GENERAL PROVISIONS

§ 1.1 Basic Definitions

§ 1.1.1 The Contract Documents

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

§ 1.1.2 The Contract

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

§ 1.1.3 The Work

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

§ 1.1.4 The Project

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

§ 1.1.5 The Drawings

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

§ 1.1.6 The Specifications

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

§ 1.1.7 Instruments of Service

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

§ 1.1.8 Initial Decision Maker

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

§ 1.2 Correlation and Intent of the Contract Documents

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

§ 1.2.1.1 The invalidity of any provision of the Contract Documents shall not invalidate the Contract or its remaining

provisions. If it is determined that any provision of the Contract Documents violates any law, or is otherwise invalid or unenforceable, then that provision shall be revised to the extent necessary to make that provision legal and enforceable. In such case the Contract Documents shall be construed, to the fullest extent permitted by law, to give effect to the parties' intentions and purposes in executing the Contract.

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

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

§ 1.3 Capitalization

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

§ 1.4 Interpretation

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

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

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

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

§ 1.6 Notice

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

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

§ 1.7 Digital Data Use and Transmission

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

§ 1.8 Building Information Models Use and Reliance

Any use of, or reliance on, all or a portion of a building information model without agreement to protocols governing the use of, and reliance on, the information contained in the model and without having those protocols set forth in AIA Document E203™-2013, Building Information Modeling and Digital Data Exhibit, and the requisite AIA Document G202™-2013, Project Building Information Modeling Protocol Form, shall be at the using or relying party's sole risk and without liability to the other party and its contractors or consultants, the authors of, or contributors to, the building

information model, and each of their agents and employees.

ARTICLE 2 OWNER

§ 2.1 General

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

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

§ 2.2 Evidence of the Owner's Financial Arrangements

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

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

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

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

§ 2.3 Information and Services Required of the Owner

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

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

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

§ 2.3.4 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the

site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

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

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

§ 2.4 Owner's Right to Stop the Work

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

§ 2.5 Owner's Right to Carry Out the Work

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

ARTICLE 3 CONTRACTOR

§ 3.1 General

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

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

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

§ 3.2 Review of Contract Documents and Field Conditions by Contractor

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

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

capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

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

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

§ 3.3 Supervision and Construction Procedures

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

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

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

§ 3.4 Labor and Materials

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

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

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

§ 3.5 Warranty

§ 3.5.1 The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes

remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

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

§ 3.6 Taxes

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

§ 3.7 Permits, Fees, Notices and Compliance with Laws

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

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

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

§ 3.7.4 Concealed or Unknown Conditions

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

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

§ 3.8 Allowances

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

§ 3.8.2 Unless otherwise provided in the Contract Documents,

- .1 allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- .2 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit, and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and

- .3 whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

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

§ 3.9 Superintendent

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

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

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

§ 3.10 Contractor's Construction and Submittal Schedules

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

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

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

§ 3.11 Documents and Samples at the Site

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

§ 3.12 Shop Drawings, Product Data and Samples

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

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

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

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

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

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

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

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

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

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

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

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

time and in the form specified by the Architect.

§ 3.13 Use of Site

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

§ 3.14 Cutting and Patching

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

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

§ 3.15 Cleaning Up

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

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

§ 3.16 Access to Work

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

§ 3.17 Royalties, Patents and Copyrights

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

§ 3.18 Indemnification

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

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

ARTICLE 4 ARCHITECT

§ 4.1 General

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

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

§ 4.2 Administration of the Contract

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

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

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

§ 4.2.4 Communications

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

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

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

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

Sections 3.3, 3.5, and 3.12. The Architect's review shall not constitute approval of safety precautions or of any construction means, methods, techniques, sequences, or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

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

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

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

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

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

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

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

ARTICLE 5 SUBCONTRACTORS

§ 5.1 Definitions

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

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

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

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

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

§ 5.2.3 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the

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

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

§ 5.3 Subcontractual Relations

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

§ 5.4 Contingent Assignment of Subcontracts

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

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

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

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

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

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

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

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

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

§ 6.1.3 The Owner shall provide for coordination of the activities of the Owner's own forces and of each Separate

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

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

§ 6.2 Mutual Responsibility

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

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

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

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

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

§ 6.3 Owner's Right to Clean Up

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

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 General

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

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

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

§ 7.2 Change Orders

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

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

§ 7.3 Construction Change Directives

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

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

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

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

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

- .1 Costs of labor, including applicable payroll taxes, fringe benefits required by agreement or custom, workers' compensation insurance, and other employee costs approved by the Architect;
- .2 Costs of materials, supplies, and equipment, including cost of transportation, whether incorporated or consumed;
- .3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
- .4 Costs of premiums for all bonds and insurance, permit fees, and sales, use, or similar taxes, directly related to the change; and
- .5 Costs of supervision and field office personnel directly attributable to the change.

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

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

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

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

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The

Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Architect determines, in the Architect's professional judgment, to be reasonably justified. The Architect's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

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

§ 7.4 Minor Changes in the Work

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

ARTICLE 8 TIME

§ 8.1 Definitions

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

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

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

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

§ 8.2 Progress and Completion

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

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

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

§ 8.3 Delays and Extensions of Time

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

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

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

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 Contract Sum

§ 9.1.1 The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable

by the Owner to the Contractor for performance of the Work under the Contract Documents.

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

§ 9.2 Schedule of Values

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

§ 9.3 Applications for Payment

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

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

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

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

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

§ 9.4 Certificates for Payment

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

§ 9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data in the Application for Payment, that, to the best of the Architect's knowledge, information, and belief, the Work has progressed to the point indicated, the quality of the Work is in accordance with the Contract Documents, and that the Contractor is entitled to payment in the amount certified. The

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

§ 9.5 Decisions to Withhold Certification

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

- .1 defective Work not remedied;
- .2 third party claims filed or reasonable evidence indicating probable filing of such claims, unless security acceptable to the Owner is provided by the Contractor;
- .3 failure of the Contractor to make payments properly to Subcontractors or suppliers for labor, materials or equipment;
- .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 damage to the Owner or a Separate Contractor;
- .6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
- .7 repeated failure to carry out the Work in accordance with the Contract Documents.

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

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

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

§ 9.6 Progress Payments

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

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

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

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors and suppliers

to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an obligation to pay, or to see to the payment of money to, a Subcontractor or supplier, except as may otherwise be required by law.

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

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

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

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

§ 9.7 Failure of Payment

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

§ 9.8 Substantial Completion

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

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

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

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

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

§ 9.9 Partial Occupancy or Use

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

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

§ 9.9.3 Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

§ 9.10 Final Completion and Final Payment

§ 9.10.1 Upon receipt of the Contractor's notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection. When the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect, (3) a written statement that the Contractor knows of no reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment, (5) documentation of any special warranties, such as manufacturers' warranties or specific Subcontractor warranties, and (6) if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts and releases and waivers of liens, claims, security interests, or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien, claim, security interest, or encumbrance. If a lien, claim, security interest, or encumbrance remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging the lien, claim, security interest, or encumbrance, including all costs and reasonable attorneys' fees.

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed, corrected, and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of the surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not

constitute a waiver of Claims.

§ 9.10.4 The making of final payment shall constitute a waiver of Claims by the Owner except those arising from

- .1 liens, Claims, security interests, or encumbrances arising out of the Contract and unsettled;
- .2 failure of the Work to comply with the requirements of the Contract Documents;
- .3 terms of special warranties required by the Contract Documents; or
- .4 audits performed by the Owner, if permitted by the Contract Documents, after final payment.

§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor, or a supplier, shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 Safety Precautions and Programs

The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Contract.

§ 10.2 Safety of Persons and Property

§ 10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury, or loss to

- .1 employees on the Work and other persons who may be affected thereby;
- .2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody, or control of the Contractor, a Subcontractor, or a Sub-subcontractor; and
- .3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction.

§ 10.2.2 The Contractor shall comply with, and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities, bearing on safety of persons or property or their protection from damage, injury, or loss.

§ 10.2.3 The Contractor shall implement, erect, and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards; promulgating safety regulations; and notifying the owners and users of adjacent sites and utilities of the safeguards.

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment, or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3. The Contractor may make a Claim for the cost to remedy the damage or loss to the extent such damage or loss is attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect.

§ 10.2.7 The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

§ 10.2.8 Injury or Damage to Person or Property

If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, notice of the injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 10.3 Hazardous Materials and Substances

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials or substances. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and notify the Owner and Architect of the condition.

§ 10.3.2 Upon receipt of the Contractor's notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of the material or substance or who are to perform the task of removal or safe containment of the material or substance. The Contractor and the Architect will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable additional costs of shutdown, delay, and start-up.

§ 10.3.3 To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss, or expense is due to the fault or negligence of the party seeking indemnity.

§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for hazardous materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for hazardous materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.

§ 10.3.5 The Contractor shall reimburse the Owner for the cost and expense the Owner incurs (1) for remediation of hazardous materials or substances the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

§ 10.3.6 If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall reimburse the Contractor for all cost and expense thereby incurred.

§ 10.4 Emergencies

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury, or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 Contractor's Insurance and Bonds

§ 11.1.1 The Contractor shall purchase and maintain insurance of the types and limits of liability, containing the

endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Contractor shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Owner, Architect, and Architect's consultants shall be named as additional insureds under the Contractor's commercial general liability policy or as otherwise described in the Contract Documents.

§ 11.1.2 The Contractor shall provide surety bonds of the types, for such penal sums, and subject to such terms and conditions as required by the Contract Documents. The Contractor shall purchase and maintain the required bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

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

§ 11.1.4 **Notice of Cancellation or Expiration of Contractor's Required Insurance.** Within three (3) business days of the date the Contractor becomes aware of an impending or actual cancellation or expiration of any insurance required by the Contract Documents, the Contractor shall provide notice to the Owner of such impending or actual cancellation or expiration. Upon receipt of notice from the Contractor, the Owner shall, unless the lapse in coverage arises from an act or omission of the Owner, have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by the Contractor. The furnishing of notice by the Contractor shall not relieve the Contractor of any contractual obligation to provide any required coverage.

§ 11.2 Owner's Insurance

§ 11.2.1 The Owner shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Owner shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located.

§ 11.2.2 **Failure to Purchase Required Property Insurance.** If the Owner fails to purchase and maintain the required property insurance, with all of the coverages and in the amounts described in the Agreement or elsewhere in the Contract Documents, the Owner shall inform the Contractor in writing prior to commencement of the Work. Upon receipt of notice from the Owner, the Contractor may delay commencement of the Work and may obtain insurance that will protect the interests of the Contractor, Subcontractors, and Sub-Subcontractors in the Work. When the failure to provide coverage has been cured or resolved, the Contract Sum and Contract Time shall be equitably adjusted. In the event the Owner fails to procure coverage, the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent the loss to the Owner would have been covered by the insurance to have been procured by the Owner. The cost of the insurance shall be charged to the Owner by a Change Order. If the Owner does not provide written notice, and the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain the required insurance, the Owner shall reimburse the Contractor for all reasonable costs and damages attributable thereto.

§ 11.2.3 **Notice of Cancellation or Expiration of Owner's Required Property Insurance.** Within three (3) business days of the date the Owner becomes aware of an impending or actual cancellation or expiration of any property insurance required by the Contract Documents, the Owner shall provide notice to the Contractor of such impending or actual cancellation or expiration. Unless the lapse in coverage arises from an act or omission of the Contractor: (1) the Contractor, upon receipt of notice from the Owner, shall have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by either the Owner or the Contractor; (2) the Contract Time and Contract Sum shall be equitably adjusted; and (3) the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent any loss to the Owner would have been covered by the insurance had it not expired or been cancelled. If the Contractor purchases replacement coverage, the cost of the insurance shall be charged to the Owner by an appropriate Change Order. The furnishing of notice by the Owner shall not relieve the Owner of any contractual obligation to provide required insurance.

§ 11.3 Waivers of Subrogation

§ 11.3.1 The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents, and employees, each of the other; (2) the Architect and Architect's consultants; and (3) Separate Contractors, if any, and any of their subcontractors, sub-subcontractors, agents, and employees, for damages caused by fire, or other causes of loss, to the extent those losses are covered by property insurance required by the Agreement or other property insurance applicable to the Project, except such rights as they have to proceeds of such insurance. The

Owner or Contractor, as appropriate, shall require similar written waivers in favor of the individuals and entities identified above from the Architect, Architect's consultants, Separate Contractors, subcontractors, and sub-subcontractors. The policies of insurance purchased and maintained by each person or entity agreeing to waive claims pursuant to this section 11.3.1 shall not prohibit this waiver of subrogation. This waiver of subrogation shall be effective as to a person or entity (1) even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, (2) even though that person or entity did not pay the insurance premium directly or indirectly, or (3) whether or not the person or entity had an insurable interest in the damaged property.

§ 11.3.2 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, to the extent permissible by such policies, the Owner waives all rights in accordance with the terms of Section 11.3.1 for damages caused by fire or other causes of loss covered by this separate property insurance.

§ 11.4 Loss of Use, Business Interruption, and Delay in Completion Insurance

The Owner, at the Owner's option, may purchase and maintain insurance that will protect the Owner against loss of use of the Owner's property, or the inability to conduct normal operations, due to fire or other causes of loss. The Owner waives all rights of action against the Contractor and Architect for loss of use of the Owner's property, due to fire or other hazards however caused.

§ 11.5 Adjustment and Settlement of Insured Loss

§ 11.5.1 A loss insured under the property insurance required by the Agreement shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.5.2. The Owner shall pay the Architect and Contractor their just shares of insurance proceeds received by the Owner, and by appropriate agreements the Architect and Contractor shall make payments to their consultants and Subcontractors in similar manner.

§ 11.5.2 Prior to settlement of an insured loss, the Owner shall notify the Contractor of the terms of the proposed settlement as well as the proposed allocation of the insurance proceeds. The Contractor shall have 14 days from receipt of notice to object to the proposed settlement or allocation of the proceeds. If the Contractor does not object, the Owner shall settle the loss and the Contractor shall be bound by the settlement and allocation. Upon receipt, the Owner shall deposit the insurance proceeds in a separate account and make the appropriate distributions. Thereafter, if no other agreement is made or the Owner does not terminate the Contract for convenience, the Owner and Contractor shall execute a Change Order for reconstruction of the damaged or destroyed Work in the amount allocated for that purpose. If the Contractor timely objects to either the terms of the proposed settlement or the allocation of the proceeds, the Owner may proceed to settle the insured loss, and any dispute between the Owner and Contractor arising out of the settlement or allocation of the proceeds shall be resolved pursuant to Article 15. Pending resolution of any dispute, the Owner may issue a Construction Change Directive for the reconstruction of the damaged or destroyed Work.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 Uncovering of Work

§ 12.1.1 If a portion of the Work is covered contrary to the Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect's examination and be replaced at the Contractor's expense without change in the Contract Time.

§ 12.1.2 If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, the Contractor shall be entitled to an equitable adjustment to the Contract Sum and Contract Time as may be appropriate. If such Work is not in accordance with the Contract Documents, the costs of uncovering the Work, and the cost of correction, shall be at the Contractor's expense.

§ 12.2 Correction of Work

§ 12.2.1 Before Substantial Completion

The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, discovered before Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the

Contractor's expense.

§ 12.2.2 After Substantial Completion

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of any applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of notice from the Owner to do so, unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.5.

§ 12.2.2.2 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

§ 12.2.2.3 The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

§ 12.2.3 The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction of the Owner or Separate Contractors, whether completed or partially completed, caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

§ 12.3 Acceptance of Nonconforming Work

If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 Governing Law

The Contract shall be governed by the law of the place where the Project is located, excluding that jurisdiction's choice of law rules. If the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.

§ 13.2 Successors and Assigns

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns, and legal representatives to covenants, agreements, and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate the assignment.

§ 13.3 Rights and Remedies

§ 13.3.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights, and remedies otherwise imposed or available by law.

§ 13.3.2 No action or failure to act by the Owner, Architect, or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed upon in writing.

§ 13.4 Tests and Inspections

§ 13.4.1 Tests, inspections, and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules, and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections, and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections, and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of tests, inspections, or approvals that do not become requirements until after bids are received or negotiations concluded. The Owner shall directly arrange and pay for tests, inspections, or approvals where building codes or applicable laws or regulations so require.

§ 13.4.2 If the Architect, Owner, or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection, or approval not included under Section 13.4.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection, or approval, by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.4.3, shall be at the Owner's expense.

§ 13.4.3 If procedures for testing, inspection, or approval under Sections 13.4.1 and 13.4.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure, including those of repeated procedures and compensation for the Architect's services and expenses, shall be at the Contractor's expense.

§ 13.4.4 Required certificates of testing, inspection, or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Architect.

§ 13.4.5 If the Architect is to observe tests, inspections, or approvals required by the Contract Documents, the Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.4.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

§ 13.5 Interest

Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at the rate the parties agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 Termination by the Contractor

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, for any of the following reasons:

- .1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;
- .2 An act of government, such as a declaration of national emergency, that requires all Work to be stopped;
- .3 Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or
- .4 The Owner has failed to furnish to the Contractor reasonable evidence as required by Section 2.2.

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, repeated suspensions, delays, or interruptions of the entire Work by the Owner as described in Section 14.3, constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed, as well as reasonable overhead and profit on Work not executed, and costs incurred by reason of such termination.

§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, or their agents or employees or any other persons or entities performing portions of the Work because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' notice to the Owner and the Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

§ 14.2 Termination by the Owner for Cause

§ 14.2.1 The Owner may terminate the Contract if the Contractor

- .1 repeatedly refuses or fails to supply enough properly skilled workers or proper materials;
- .2 fails to make payment to Subcontractors or suppliers in accordance with the respective agreements between the Contractor and the Subcontractors or suppliers;
- .3 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or
- .4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

§ 14.2.2 When any of the reasons described in Section 14.2.1 exist, and upon certification by the Architect that sufficient cause exists to justify such action, the Owner may, without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- .1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- .2 Accept assignment of subcontracts pursuant to Section 5.4; and
- .3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

§ 14.3 Suspension by the Owner for Convenience

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work, in whole or in part for such period of time as the Owner may determine.

§ 14.3.2 The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay, or interruption under Section 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent

- .1 that performance is, was, or would have been, so suspended, delayed, or interrupted, by another cause for which the Contractor is responsible; or
- .2 that an equitable adjustment is made or denied under another provision of the Contract.

§ 14.4 Termination by the Owner for Convenience

§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

§ 14.4.2 Upon receipt of notice from the Owner of such termination for the Owner's convenience, the Contractor shall

- .1 cease operations as directed by the Owner in the notice;
- .2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and
- .3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

§ 14.4.3 In case of such termination for the Owner's convenience, the Owner shall pay the Contractor for Work properly executed; costs incurred by reason of the termination, including costs attributable to termination of Subcontracts; and the termination fee, if any, set forth in the Agreement.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 Claims

§ 15.1.1 Definition

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, a change in the Contract Time, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim. This Section 15.1.1 does not require the Owner to file a Claim in order to impose liquidated damages in accordance with the Contract Documents.

§ 15.1.2 Time Limits on Claims

The Owner and Contractor shall commence all Claims and causes of action against the other and arising out of or related to the Contract, whether in contract, tort, breach of warranty or otherwise, in accordance with the requirements of the binding dispute resolution method selected in the Agreement and within the period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all Claims and causes of action not commenced in accordance with this Section 15.1.2.

§ 15.1.3 Notice of Claims

§ 15.1.3.1 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered prior to expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party under this Section 15.1.3.1 shall be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

§ 15.1.3.2 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party. In such event, no decision by the Initial Decision Maker is required.

§ 15.1.4 Continuing Contract Performance

§ 15.1.4.1 Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents.

§ 15.1.4.2 The Contract Sum and Contract Time shall be adjusted in accordance with the Initial Decision Maker's decision, subject to the right of either party to proceed in accordance with this Article 15. The Architect will issue Certificates for Payment in accordance with the decision of the Initial Decision Maker.

§ 15.1.5 Claims for Additional Cost

If the Contractor wishes to make a Claim for an increase in the Contract Sum, notice as provided in Section 15.1.3 shall be given before proceeding to execute the portion of the Work that is the subject of the Claim. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

§ 15.1.6 Claims for Additional Time

§ 15.1.6.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, notice as provided in Section

15.1.3 shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary.

§ 15.1.6.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated, and had an adverse effect on the scheduled construction.

§ 15.1.7 Waiver of Claims for Consequential Damages

The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

- .1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and
- .2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit, except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.7 shall be deemed to preclude assessment of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

§ 15.2 Initial Decision

§ 15.2.1 Claims, excluding those where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2 or arising under Sections 10.3, 10.4, and 11.5, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim. If an initial decision has not been rendered within 30 days after the Claim has been referred to the Initial Decision Maker, the party asserting the Claim may demand mediation and binding dispute resolution without a decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of the request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished, or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution.

§ 15.2.6 Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.

§ 15.2.6.1 Either party may, within 30 days from the date of receipt of an initial decision, demand in writing that the other party file for mediation. If such a demand is made and the party receiving the demand fails to file for mediation within 30 days after receipt thereof, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision.

§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.8 If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

§ 15.3 Mediation

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract, except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.7, shall be subject to mediation as a condition precedent to binding dispute resolution.

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

§ 15.3.3 Either party may, within 30 days from the date that mediation has been concluded without resolution of the dispute or 60 days after mediation has been demanded without resolution of the dispute, demand in writing that the other party file for binding dispute resolution. If such a demand is made and the party receiving the demand fails to file for binding dispute resolution within 60 days after receipt thereof, then both parties waive their rights to binding dispute resolution proceedings with respect to the initial decision.

§ 15.3.4 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

§ 15.4 Arbitration

§ 15.4.1 If the parties have selected arbitration as the method for binding dispute resolution in the Agreement, any Claim subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of the Agreement. The Arbitration shall be conducted in the place where the Project is located, unless another location is mutually agreed upon. A demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The party filing a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded.

§ 15.4.1.1 A demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation, but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the Claim would be barred by the applicable statute of limitations. For statute of limitations purposes, receipt of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the Claim.

§ 15.4.2 The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

§ 15.4.3 The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly

consented to by parties to the Agreement, shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

§ 15.4.4 Consolidation or Joinder

§ 15.4.4.1 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party provided that (1) the arbitration agreement governing the other arbitration permits consolidation, (2) the arbitrations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).

§ 15.4.4.2 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.

§ 15.4.4.3 The Owner and Contractor grant to any person or entity made a party to an arbitration conducted under this Section 15.4, whether by joinder or consolidation, the same rights of joinder and consolidation as those of the Owner and Contractor under this Agreement.

Sample



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 - UNION

Craft: Air Conditioning & Refrigeration - Service and Repair

PREVAILING WAGE RATE

	03/03/21
Journeyman (Mechanic)	W41.48 B26.57 T68.05

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 - UNION

Craft: Boilermaker PREVAILING WAGE RATE

	01/01/21
Foreman	W52.51 B45.60 T98.11
General Foreman	W54.51 B46.63 T101.14
Journeyman	W47.51 B43.91 T91.42

Craft: Boilermaker APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
	65%	70%	75%	80%	85%	90%	95%			
1000 Hours										
Benefit =	37.08	37.99	39.49	39.84	40.78	41.70	42.61			

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

APPRENTICE RATE SCHEDULE AS OF 1-1-21:

INTERVAL	PERIOD AND RATES									
1000 Hours	65%	70%	75%	80%	85%	90%	95%			
Benefits	37.72	38.20	39.20	40.14	41.09	42.03	42.96			

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.

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

County - UNION

- 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.

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 - UNION

Craft: Boilermaker - Minor Repairs

PREVAILING WAGE RATE

	01/01/21
Foreman	W34.62 B17.57 T52.19
General Foreman	W35.25 B17.57 T52.82
Mechanic	W33.25 B17.57 T50.82

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 - UNION

Craft: Bricklayer, Stone Mason

PREVAILING WAGE RATE

	05/01/21
Deputy Foreman	W48.20 B33.73 T81.93
Foreman	W51.20 B33.73 T84.93
Journeyman	W45.20 B33.73 T78.93

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	22.17	23.66	25.14	26.62		

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 - UNION

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 - UNION

Craft: Carpenter PREVAILING WAGE RATE

	05/01/21
Foreman	W59.67 B34.56 T94.23
Journeyman	W51.89 B30.12 T82.01

Craft: Carpenter APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
Yearly	40%	55%	65%	80%	90%					
Benefit	57% 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 - UNION

Craft: Carpenter - Resilient Flooring

PREVAILING WAGE RATE

	05/01/21
Foreman	W59.67 B34.47 T94.14
Journeyman	W51.89 B30.03 T81.92

Craft: Carpenter - Resilient Flooring

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
Yearly	40%	55%	65%	80%	90%					
Benefit	57%	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 - UNION

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 - UNION

Craft: Cement Mason

PREVAILING WAGE RATE

See "Bricklayer, Stone Mason" Rates

Craft: Cement Mason

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									

Ratio of Apprentices to Journeymen - 1:4

Craft: Cement Mason

COMMENTS/NOTES

See "Bricklayer, Stone Mason" Rates

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

County - UNION

Craft: Commercial Painter- New Construction

PREVAILING WAGE RATE

	05/01/21
Foreman	W46.37 B27.61 T73.98
General Foreman	W50.58 B28.10 T78.68
Journeyman	W42.15 B27.11 T69.26

Craft: Commercial Painter- New Construction

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
	40%	45%	55%	65%	70%	75%	80%	80%		
6 Months										
Benefits	8.40	8.40	10.40	10.40	11.40	11.40	14.15	14.15		

Ratio of Apprentices to Journeymen - 1:4

Craft: Commercial Painter- New Construction

COMMENTS/NOTES

* Commercial Painters perform work on all commercial structures such as offices, schools, hotels, shopping malls, restaurants, condominiums, etc.

Spraying, sandblasting, lead abatement work on commercial buildings, work performed above 3 stories or 30 feet in height, or using swing scaffolds requires an additional 10% of the wage rate.

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, 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 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,

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

County - UNION

Veterans' Day, Thanksgiving Day, Christmas Day.

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

County - UNION

Craft: Commercial Painter- Repainting

PREVAILING WAGE RATE

	05/01/21
Foreman	W33.11 B20.66 T53.77
General Foreman	W36.12 B20.66 T56.78
Journeyman	W30.10 B20.66 T50.76

Craft: Commercial Painter- Repainting

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
	SEE	COMME R	CIAL	PAINTER	NEW	CONSTR UC	TION			

Ratio of Apprentices to Journeymen - 1:4

Craft: Commercial Painter- Repainting

COMMENTS/NOTES

* Commercial Painters perform work on all commercial structures such as offices, schools, hotels, shopping malls, restaurants, condominiums, etc.

NOTE: These rates may only be used on jobs where no major alterations (only doing painting and carpeting with nothing else being changed in the commercial building) occur, and where not more than 3 other trades are present on the job, but may NOT, under any circumstances, be used for work on bridges, stacks, tanks, or generating stations.

Spraying, sandblasting, lead abatement work on commercial buildings, work performed above 3 stories or 30 feet in height, or using swing scaffolds requires an additional 10% of the wage rate.

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.

OVERTIME:

- Hours in excess of 8 per day and 40 per week 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.
- Four 10-hour days may be worked, at straight time, Monday through Sunday.

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 - UNION

Craft: Dockbuilder PREVAILING WAGE RATE

	05/07/21
Foreman	W56.35 B48.97 T105.32
Foreman (Concrete Form Work)	W55.26 B35.61 T90.87
Journeyman	W49.00 B48.97 T97.97
Journeyman (Concrete Form Work)	W48.05 B35.61 T83.66

Craft: Dockbuilder APPRENTICE RATE SCHEDULE

<u>INTERVAL</u>	<u>PERIOD AND RATES</u>									
Yearly	19.60	24.50	31.85	39.20						
Benefit	32.37	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	19.22	24.03	31.23	38.44
Benefits	24.34	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 - UNION

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 - UNION

Craft: Drywall Finisher

PREVAILING WAGE RATE

	05/01/21
Foreman	W44.43 B27.68 T72.11
General Foreman	W46.45 B27.68 T74.13
Journeyman	W40.39 B27.68 T68.07

Craft: Drywall Finisher

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
	40%	50%		60%	70%		80%	90%		
6 Months										
Benefits	Intervals	1 to 2 =	10.75	Intervals	3 to 4 =	13.52	Intervals	5 to 6 =	17.13	

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 - UNION

Craft: Electrician

PREVAILING WAGE RATE

	05/31/21
Cable Splicer	W64.51 B39.68 T104.19
Foreman (11-20 Journeymen)	W68.62 B42.21 T110.83
Foreman (1-3 Journeymen)	W64.51 B39.68 T104.19
Foreman (4-10 Journeymen)	W67.45 B41.49 T108.94
General Foreman (21-30 Journeymen)	W70.38 B43.29 T113.67
General Foreman (31-60 Journeymen)	W76.24 B46.90 T123.14
General Foreman (61+ Journeymen)	W77.41 B47.62 T125.03
Journeyman	W58.65 B36.08 T94.73
Sub-Foreman	W66.86 B41.13 T107.99

Craft: Electrician

APPRENTICE RATE SCHEDULE

<u>INTERVAL</u>	<u>PERIOD AND RATES</u>									
	Yearly	40%	49%	58%	68%	80%		of Jour	neyman	Wage
Benefit	40%	49%	58%	68%	80%		of Jour	neyman	Benefit	Rate

Ratio of Apprentices to Journeymen - 2:3

Craft: Electrician

COMMENTS/NOTES

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

County - UNION

THESE RATES ALSO APPLY TO THE FOLLOWING:

- All burglar and fire alarm work.
- All fiber optic work.
- Teledata work in new construction.
- Teledata work involving 16 Voice/Data Lines or more.

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

FOREMAN REQUIREMENTS:

- 1 to 3 Journeymen- 1 must be a Foreman (Foreman/1-3 Journeymen rate).
- 4 to 10 Journeymen- 1 must be a Foreman (Foreman/4-10 Journeymen rate).
- 11 to 20 Journeymen- 1 must be Foreman (Foreman/11-20 Journeymen rate) and 1 must be a Sub-Foreman.
- 21 to 30 Journeymen- 1 must be a General Foreman (General Foreman/21-30 Journeymen rate) and 2 must be a Sub-Foreman.
- 31 to 40 Journeymen- 1 must be a General Foreman (General Foreman/31-40 Journeymen rate) and 3 must be a Sub-Foreman.
- 41 to 50 Journeymen- 1 must be a General Foreman (General Foreman/31-60 Journeymen rate) and 4 must be a Sub-Foreman.
- 51 to 60 Journeymen- 1 must be a General Foreman (General Foreman/31-60 Journeymen rate) and 5 must be a Sub-Foreman.
- 61+ Journeymen- 1 must be a General Foreman (General Foreman/61+ Journeymen rate) and 6 must be a Sub-Foreman.

SHIFT DIFFERENTIALS:

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

OVERTIME:

Hours in excess of 8 per day, or outside of the regular workday, 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, Christmas Day.

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

County - UNION

Craft: Electrician - Teledata (15 Voice/Data Lines & Less)

PREVAILING WAGE RATE

	11/02/20
Master Technician/General Foreman	W57.42 B31.58 T89.00
Senior Technician/Lead Foreman (21-30 Workers on Job)	W52.56 B28.91 T81.47
Technician A/Foreman (11-20 Workers on Job)	W50.35 B27.69 T78.04
Technician B/Working Foreman (4-10 Workers on Job)	W48.15 B26.47 T74.62
Technician C/Journeyman (1-3 Workers on Job)	W44.17 B24.29 T68.46

Craft: Electrician - Teledata (15 Voice/Data Lines & Less)

APPRENTICE RATE SCHEDULE

<u>INTERVAL</u>	<u>PERIOD AND RATES</u>										
6 Months						66%	72%	79%	86%		
Benefits						11.81	12.89	14.14	15.40		

Ratio of Apprentices to Journeymen - 2:3

Craft: Electrician - Teledata (15 Voice/Data Lines & Less)

COMMENTS/NOTES

APPRENTICE RATE SCHEDULE FOR THOSE APPRENTICES ENTERING PROGRAM AFTER 10-31-14:

INTERVAL	<u>PERIOD AND RATES</u>										
6 Months	35%	35%	40%	43%	48%	54%	61%	67%	74%	81%	
Benefits	6.76	6.76	7.16	7.70	8.59	9.66	10.82	11.99	13.25	14.51	

NOTES:

- These rates are for service, maintenance, moves, and/or changes affecting 15 Voice/Data (teledata) lines or less. These rates may NOT be used for any teledata work in new construction (including additions) or any fiber optic work.
- The number of Teledata workers on the jobsite is the determining factor for which Foreman category applies .

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

SHIFT DIFFERENTIALS:

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

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

County - UNION

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

OVERTIME:

Hours in excess of 8 per day, or outside of the regular workday, 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, Christmas Day.

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

County - UNION

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 - UNION

Craft: Electrician- Outside Commercial

PREVAILING WAGE RATE

	05/31/21
Cable Splicer	W64.81 B39.38 T104.19
Certified Welder	W61.87 B37.60 T99.47
Equipment Operator	W58.92 B35.80 T94.72
Foreman (1-3 Journeymen workers on job)	W64.81 B39.38 T104.19
Foreman (4-10 Journeymen workers on job)	W67.76 B41.17 T108.93
General Foreman (11-20 Journeymen workers on job)	W68.94 B41.89 T110.83
General Foreman (21-30 Journeymen workers on job)	W70.71 B42.97 T113.68
General Foreman (31-60 Journeymen workers on job)	W76.60 B46.54 T123.14
General Foreman (61+ Journeymen workers on job)	W77.78 B47.26 T125.04
Groundman	W35.35 B21.49 T56.84
Journeyman Lineman/Technician	W58.92 B35.80 T94.72
Sub-Foreman	W67.17 B40.83 T108.00

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

County - UNION

Craft: Electrician- Outside Commercial

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
1000 Hours	60%	65%	70%	75%	80%	85%	90%			
Benefits	60.75% of	Journey	man	wage	+	\$.01				

Craft: Electrician- Outside Commercial

COMMENTS/NOTES

* FOR UTILITY WORK PLEASE SEE STATEWIDE RATES

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

FOREMAN REQUIREMENTS:

- 1 to 3 Journeymen- 1 must be a Foreman (Foreman/1-3 Journeymen rate).
- 4 to 10 Journeymen- 1 must be a Foreman (Foreman/4-10 Journeymen rate).
- 11 to 20 Journeymen- 1 must be Foreman (Foreman/11-20 Journeymen rate) and 1 must be a Sub-Foreman.
- 21 to 30 Journeymen- 1 must be a General Foreman (General Foreman/21-30 Journeymen rate) and 2 must be a Sub-Foreman.
- 31 to 40 Journeymen- 1 must be a General Foreman (General Foreman/31-40 Journeymen rate) and 3 must be a Sub-Foreman.
- 41 to 50 Journeymen- 1 must be a General Foreman (General Foreman/31-60 Journeymen rate) and 4 must be a Sub-Foreman.
- 51 to 60 Journeymen- 1 must be a General Foreman (General Foreman/31-60 Journeymen rate) and 5 must be a Sub-Foreman.
- 61+ Journeymen- 1 must be a General Foreman (General Foreman/61+ Journeymen rate) and 6 must be a Sub-Foreman.

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, 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, or outside of the regular workday, 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.

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

County - UNION

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 - UNION

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	29.70	32.18	34.65	37.13	39.60	42.08	44.55			
Benefits	26.19	27.65	29.10	30.58	32.04	33.51	34.95			

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 - UNION

Day, Veterans' Day, Thanksgiving Day and the day after, Christmas Day. Saturday holidays shall be observed on the previous Friday and Sunday holidays shall be observed on the following Monday.

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

County - UNION

Craft: Elevator Modernization & Service

PREVAILING WAGE RATE

	03/17/21	03/17/22	03/17/23
Journeyman	W56.77	W59.09	W60.89
	B41.82	B42.79	B44.41
	T98.59	T101.88	T105.30

Craft: Elevator Modernization & Service

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
Yearly	29.85	28.84	34.09	39.33						
Benefits	32.66	33.13	34.36	35.58						

Ratio of Apprentices to Journeymen - 1:1

Craft: Elevator Modernization & Service

COMMENTS/NOTES

APPRENTICE RATE SCHEDULE AS OF 3-17-20:

INTERVAL	PERIOD AND RATES			
Yearly	31.03	30.01	35.46	40.92
Benefits	33.33	33.82	35.09	36.36

APPRENTICE RATE SCHEDULE AS OF 3-17-21:

INTERVAL	PERIOD AND RATES			
Yearly	32.27	31.22	36.90	42.58
Benefits	34.00	34.50	35.83	37.15

APPRENTICE RATE SCHEDULE AS OF 3-17-22:

INTERVAL	PERIOD AND RATES			
Yearly	33.56	32.50	38.41	44.32
Benefits	34.67	34.20	35.20	37.94

APPRENTICE RATE SCHEDULE AS OF 3-17-23:

INTERVAL	PERIOD AND RATES			
Yearly	34.60	33.49	39.58	45.67
Benefits	35.97	36.53	37.95	39.38

MODERNIZATION (addition, replacement, refurbishing, relocation, or changes in design or appearance, of elevator equipment in existing buildings):

- The regular workday consists of 8 hours, between 7:00 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 Saturday and Sunday shall be paid at time and one-half the hourly rate. Holiday pay is one days wages (8 hours) plus time and one-half the hourly rate for all hours worked.

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

County - UNION

SERVICE (repair or replacement of parts for the purpose of maintaining elevator equipment in good operating condition):

- The regular workday consists of 8 hours, between 6:00 AM and 6:00 PM.

- 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 hourly rate. All hours on Sunday and holidays shall be paid at double the hourly rate.

RECOGNIZED HOLIDAYS (Modernization and Service): 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. Saturday holidays shall be observed on the previous Friday and Sunday holidays shall be observed on the following Monday.

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

County - UNION

Craft: Glazier PREVAILING WAGE RATE

	05/07/21
* Leadman	W50.50 B27.86 T78.36
Foreman	W52.50 B28.10 T80.60
General Foreman	W54.50 B28.34 T82.84
Journeyman	W48.50 B27.62 T76.12

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	13.60	13.60	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 - UNION

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 - UNION

Craft: Heat & Frost Insulator

PREVAILING WAGE RATE

	09/21/20
Foreman	W58.52 B33.42 T91.94
General Foreman	W60.86 B34.53 T95.39
Journeyman	W56.74 B32.86 T89.60

Craft: Heat & Frost Insulator

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
Yearly	26.55	31.49	37.95	44.36						
Benefits	19.44	23.03	25.44	27.76						

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 - UNION

Craft: Heat & Frost Insulator - Asbestos Worker

PREVAILING WAGE RATE

	09/24/19
Asbestos Helper	W36.89
Abatement	B24.92
	T61.81

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 - UNION

Craft: Industrial Painter- Bridges

PREVAILING WAGE RATE

	02/11/21
Foreman	W62.18 B31.62 T93.80
General Foreman	W64.18 B31.62 T95.80
Journeyman	W57.18 B31.62 T88.80

Craft: Industrial Painter- Bridges

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
	60%	70%	80%	90%						
6 Months										
Benefits	14.27	14.50	17.73	17.96						

Ratio of Apprentices to Journeymen - 1:4

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.
- 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, Presidential Election Day, Veterans' Day, Thanksgiving Day, Christmas Day. Saturday holiday observed the preceding Friday. Sunday holiday

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

County - UNION

observed the following Monday.

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

County - UNION

Craft: Industrial Painter- Structural Steel

PREVAILING WAGE RATE

	02/11/21
Foreman	W50.92 B29.27 T80.19
General Foreman	W52.92 B29.27 T82.19
Journeyman	W45.92 B29.27 T75.19

Craft: Industrial Painter- Structural Steel

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
	SEE	INDUST	RIAL	PAINTER	BRIDGES					

Ratio of Apprentices to Journeymen - 1:4

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.
- 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, 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 - UNION

Craft: Industrial Painter- Water Tanks

PREVAILING WAGE RATE

	02/11/21
Foreman	W51.97 B28.92 T80.89
General Foreman	W53.97 B28.92 T82.89
Journeyman	W46.97 B28.92 T75.89

Craft: Industrial Painter- Water Tanks

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
6 Months	50%	70%	90%							
Benefits	11.77	14.50	17.96							

Ratio of Apprentices to Journeymen - 1:4

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.
- 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, 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 - UNION

Craft: Industrial Painter-Containment

PREVAILING WAGE RATE

	02/11/21
Journeyman	W38.23 B28.67 T66.90

Craft: Industrial Painter-Containment

COMMENTS/NOTES

Note: These rates shall require no painting, but used in a supporting capacity only, such as wrapping, boxing, fencing, etc. on tanks.

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.

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, 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 - UNION

Craft: Ironworker PREVAILING WAGE RATE

	07/24/20
Rod /Fence Foreman	W46.14 B48.12 T94.26
Rod/Fence Journeyman	W43.14 B48.12 T91.26
Structural Foreman	W48.44 B48.12 T96.56
Structural Journeyman	W45.44 B48.12 T93.56

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:

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

County - UNION

- 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 - UNION

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						
Benefits	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 (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 - UNION

Craft: Laborer - Building

PREVAILING WAGE RATE

	05/07/21
Class A Journeyman	W35.25 B30.62 T65.87
Class B Journeyman	W34.50 B30.62 T65.12
Class C Journeyman	W29.33 B30.62 T59.95
Foreman	W39.66 B30.62 T70.28
General Foreman	W44.06 B30.62 T74.68

Craft: Laborer - Building

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
	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 (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 - UNION

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 - UNION

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	22.48	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 - UNION

Craft: Laborer-Residential and Modular Construction

PREVAILING WAGE RATE

	04/01/20
* Skilled Tradesman (only applies to Modular Construction)	W26.55 B5.45 T32.00
Foreman (person directing crew, regardless of his skill classification)	W30.55 B5.45 T36.00
Laborer	W22.55 B5.45 T28.00
Laborer (for single family and stand-alone duplex owned by single owner)	W17.05 B2.95 T20.00

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 - UNION

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 - UNION

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 - UNION

Craft: Painter - Line Striping

PREVAILING WAGE RATE

	12/10/20
Apprentice (1st year)	W27.50 B12.15 T39.65
Apprentice (2nd year)	W31.50 B23.10 T54.60
Foreman (Charge Person)	W40.15 B23.88 T64.03
Journeyman 1 (at least 1 year of working exp. as a journeyman)	W35.38 B23.88 T59.26
Journeyman 2 (at least 2 years of working exp. as a journeyman)	W39.15 B23.88 T63.03

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 - UNION

Craft: Paperhanger PREVAILING WAGE RATE

	05/01/21
Foreman	W47.34 B27.22 T74.56
Journeyman	W43.04 B27.22 T70.26

Craft: Paperhanger APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
	SEE	COMME R	CIAL	PAINTER	NEW	CONSTR	UCTION			

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 - UNION

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

NOTE: Maintenance work is work to repair, restore, or improve the efficiency of existing facilities. This does NOT apply to ANY new construction.

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 are observed the following Monday.

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

County - UNION

Craft: Plasterer

PREVAILING WAGE RATE

See Bricklayer, Stone Mason Rates

Craft: Plasterer

COMMENTS/NOTES

See BRICKLAYER, STONE MASON Rates

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

County - UNION

Craft: Plumber PREVAILING WAGE RATE

	05/05/21
Foreman	W61.77 B38.82 T100.59
General Foreman	W65.77 B38.82 T104.59
Journeyman	W57.19 B38.82 T96.01

Craft: Plumber APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
Yearly	30%	45%	55%	65%	75%					
Benefits	16.17	22.06	23.99	25.95	27.87					

Ratio of Apprentices to Journeymen - *

* Employers may employ 1 apprentice on any job where 1 or 2 journeymen are employed. Thereafter, 1 apprentice may be employed for every 4 journeymen.

Craft: Plumber COMMENTS/NOTES

FOREMAN REQUIREMENTS:

- On any job having 2 or more Plumbers, 1 must be designated a Foreman.
- On any job having 9 or more Plumbers, 2 shall be designated as Foremen.

The regular workday shall consist of 8 hours between 7:00 AM and 4:30 PM.

SHIFT DIFFERENTIALS:

- Shift work must continue for a minimum of 5 consecutive workdays.
- When two shifts are worked, the second shift shall work 7.5 hours and receive 8 hours pay, at a rate equal to the hourly rate plus 10%, inclusive of benefits.
- When a third shift is worked, the third shift shall work 7 hours and receive 8 hours pay, at a rate equal to the hourly rate plus 15%, inclusive of benefits.

OVERTIME:

- All 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 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.
- 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, 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 - UNION

Craft: Roofer PREVAILING WAGE RATE

	06/29/21
Foreman	W44.27 B28.81 T73.08
Journeyman	W41.27 B28.81 T70.08

Craft: Roofer APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
6 Months	16.50	20.63	24.76	26.82	28.89	30.95	33.01	37.14		
Benefits	2.16	2.16	26.06	26.06	26.06	26.06	26.06	26.06		

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 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 - UNION

Craft: Sheet Metal Sign Installation

PREVAILING WAGE RATE

	04/05/21
Foreman	W39.79 B37.29 T77.08
Journeyman	W38.04 B37.29 T75.33

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	12.61	14.38	16.14	17.92	20.14	21.94	23.75	25.58	27.38	29.18

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 - UNION

Craft: Sheet Metal Worker

PREVAILING WAGE RATE

	06/29/21
Foreman	W54.85 B48.17 T103.02
General Foreman	W55.85 B48.17 T104.02
Journeyman	W51.35 B48.17 T99.52

Craft: Sheet Metal Worker

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
Yearly	35%	45%	55%	65%	of	Journey	man	Wage	Rate	
Benefit	35%	45%	55%	65%	of	Journey	man	Benefit	Rate	

Ratio of Apprentices to Journeymen - 1:4

Craft: Sheet Metal Worker

COMMENTS/NOTES

FOREMAN REQUIREMENTS:

- When there are 2 or more Sheet Metal Workers on a project, 1 must be designated a Foreman.
- When there are 17 or more Sheet Metal Workers on a project, 1 must be designated a General Foreman.
- When there is only 1 Sheet Metal Worker (1 Journeyman) on a project, he/she shall receive \$1.00 more than the regular Journeyman's rate.

The regular workday is 8 hours between 7:00 AM and 4:30 PM.

SHIFT DIFFERENTIAL:

- 2nd Shift (3:30 PM - 12:00 AM) : +17% of regular hourly rate
- Shift work must run for a minimum of 5 consecutive workdays.

OVERTIME:

- Hours in excess of 8 per day, or before or after the regular workday, that are not shift work, and the first 10 hours on Saturdays shall be paid at time and one-half of the regular rate, inclusive of benefits. Hours in excess of 10 per day on Saturday, and all hours on Sundays and holidays shall be at double the regular rate, inclusive of benefits.
- Four 10-hour days may be worked, Monday through Friday, at straight time, with hours in excess of 10 per day, and hours in excess of 40 per week paid at the overtime rates listed above.

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. Sunday holidays will be observed the following Monday.

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

County - UNION

Craft: Tile Setter - Ceramic

PREVAILING WAGE RATE

	07/01/21
Finisher	W46.89 B31.85 T78.74
Setter	W61.07 B35.02 T96.09

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 - UNION

Craft: Tile Setter - Marble

PREVAILING WAGE RATE

	01/04/21	07/05/21
Tile Setter	W60.89 B37.80 T98.69	W61.73 B37.91 T99.64

Craft: Tile Setter - Marble

APPRENTICE RATE SCHEDULE

INTERVAL	PERIOD AND RATES									
750 Hours	40%	45%	50%	55%	60%	65%	70%	75%	85%	95%

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 - UNION

Craft: Tile Setter - Mosaic & Terrazzo

PREVAILING WAGE RATE

	07/01/21
Grinder or Assistant	W56.86 B38.07 T94.93
Mechanic	W58.46 B38.09 T96.55
Terrazzo Resinous Worker	W48.95 B30.71 T79.66

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 - UNION

Craft: Truck Driver

PREVAILING WAGE RATE

	05/01/20
Bucket, Utility, Pick-up, Fuel Delivery trucks	W39.21 B38.05 T77.26
Dump truck, Asphalt Distributor, Tack Spreader	W39.21 B38.05 T77.26
Euclid-type vehicles (large, off-road equipment)	W39.31 B38.05 T77.36
Helper on Asphalt Distributor truck	W39.21 B38.05 T77.26
Slurry Seal, Seeding/Fertilizing/ Mulching truck	W39.21 B38.05 T77.26
Straight 3-axle truck	W39.21 B38.05 T77.26
Tractor Trailer (all types)	W39.31 B38.05 T77.36
Vacuum or Vac-All truck (entire unit)	W39.21 B38.05 T77.26
Winch Trailer	W39.41 B38.05 T77.46

Craft: Truck Driver

COMMENTS/NOTES

BLENDED RATE:

When a truck driver is performing work on the 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.

HAZARDOUS WASTE REMOVAL:

- On hazardous waste removal work on a State designated hazardous waste site where the driver is in direct contact with hazardous materials and when personal protective equipment is required for respiratory, skin, and eye protection, the driver shall receive an additional \$3.00 per hour (with or without protective gear).
- A hazardous waste related certified worker at a designated hazardous waste site who is not working in a zone requiring level A, B or C personal protection shall receive an additional \$1.00 per hour.

TRUCK FOREMAN: \$.75 cents per hour above regular rate. Overtime shall be increased accordingly.

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

County - UNION

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

SHIFT DIFFERENTIAL:

- Shifts starting at 4:00 PM (2nd Shift): + \$3.00 per hour.
- Shifts starting at 12:00 AM (midnight/3rd Shift): time and one-half the hourly rate.
- Shifts starting at a time other than from 6:00 AM to 8:00 AM, when such hours are mandated by the project owner: + \$3.00 per hour.

OVERTIME:

- Hours in excess of 8 per day, or before or after the regular workday, Monday through Friday, 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.
 - Employees may work four 10-hour days at straight time, Monday through Thursday, with Friday used as a make-up day for a lost day. If Friday is not a make-up day, then all hours on Friday shall be paid at time and one-half the hourly rate.
 - Benefits on overtime shall be \$36.80.
- As of 5-1-20, benefits on overtime shall be \$37.80.

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

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

County - UNION

Craft: Truck Driver-Material Delivery Driver

PREVAILING WAGE RATE

	04/01/20
Driver	W25.60 B15.71 T41.31

Craft: Truck Driver-Material Delivery Driver

COMMENTS/NOTES

BLENDED RATE:

When a truck driver is performing work on the site and also serving as a material delivery driver, the driver shall be paid a "blended rate". See the "Truck Driver" craft for the blended rates.

Truck Foreman/Shop Steward: +\$0.25 per hour

SHIFT DIFFERENTIALS:

- 2nd Shift shall receive an additional \$0.50 per hour
- 3rd Shift shall receive time and one-half the hourly rate.

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 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.

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

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

County - UNION

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 4:30 PM.

SHIFT DIFFERENTIALS:

- Shift work must run for 5 consecutive workdays.
- When 2 shifts are worked, the second shift shall receive an additional 10% of the regular rate inclusive of benefits, per hour.
- When 3 shifts are worked, the second shift shall receive 8 hours pay for 7.5 hours of work, plus an additional 10% of the regular rate inclusive of benefits, per hour. The third shift shall receive 8 hours pay for 7 hours of work, plus an additional 15% of the regular rate inclusive of benefits, per hour.
- When such hours are mandated by the project owner, a shift that starts between 8:00 PM and midnight and ends by 6:00 AM Saturday, or that starts after 8:00 PM on Sunday, provided there are consecutive hours of work within the shift, shall receive an additional 15% of the regular rate, inclusive of benefits.
- On Highway, Road, Street, and Sewer projects irregular shifts starting between 5:00 PM and 12:00 AM may be worked Monday through Friday, and shall receive an additional 15% of the regular rate, inclusive of benefits. When working with other trades that receive a higher irregular shift rate, the Operating Engineer shall also receive the higher irregular shift 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 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.
- 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 Veteran's Day.

On hazardous waste removal work or asbestos removal work, on a state or federally designated hazardous waste site, where the operating engineer is in direct contact with hazardous material and when personal protective equipment is required for respiratory, skin, and eye protection, the operating engineer shall receive an additional 20% of the hourly wage, per hour.

OPERATING ENGINEERS **Rates Expiration Date :**

Effective Dates:

	07/01/2021		07/01/2022
Rate	Fringe	Total	Total
54.43	35.60	90.03	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:

	07/01/2021		07/01/2022	
Rate	Fringe	Total	Total	
54.43	35.60	90.03	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:

	07/01/2021		07/01/2022	
Rate	Fringe	Total	Total	
52.52	35.60	88.12	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:

	07/01/2021		07/01/2022	
Rate	Fringe	Total	Total	
52.52	35.60	88.12	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:

	07/01/2021		07/01/2022
Rate	Fringe	Total	Total
52.52	35.60	88.12	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:

07/01/2021			07/01/2022
Rate	Fringe	Total	Total
52.52	35.60	88.12	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:

07/01/2021			07/01/2022
Rate	Fringe	Total	Total
49.18	35.60	84.78	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:

07/01/2021			07/01/2022
Rate	Fringe	Total	Total
46.60	35.60	82.20	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:

	07/01/2021		07/01/2022	
Rate	Fringe	Total	Total	
56.76	35.60	92.36	94.61	

CLASSIFICATIONS:

Lead Engineer, Foreman Engineer, Safety Engineer (minimum)

OPERATING ENGINEERS **Rates Expiration Date :**

Effective Dates:

	07/01/2021		07/01/2022
Rate	Fringe	Total	Total
56.02	35.60	91.62	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:

	07/01/2021		07/01/2022	
	Rate	Fringe	Total	Total
	56.02	35.60	91.62	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:

	07/01/2021		07/01/2022
Rate	Fringe	Total	Total
50.89	35.60	86.49	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:

	07/01/2021		07/01/2022	
	Rate	Fringe	Total	Total
	50.89	35.60	86.49	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:

	07/01/2021		07/01/2022	
	Rate	Fringe	Total	Total
	57.84	35.60	93.44	95.69

CLASSIFICATIONS:

Helicopter Pilot/Engineer

Effective Dates:

	07/01/2021		07/01/2022	
	Rate	Fringe	Total	Total
	62.52	35.60	98.12	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:

	07/01/2021		07/01/2022	
	Rate	Fringe	Total	Total
	61.52	35.60	97.12	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:

	07/01/2021		07/01/2022	
	Rate	Fringe	Total	Total
	58.02	35.60	93.62	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:

	07/01/2021		07/01/2022	
	Rate	Fringe	Total	Total
	60.52	35.60	96.12	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:

	07/01/2021		07/01/2022	
	Rate	Fringe	Total	Total
	57.02	35.60	92.62	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 4:30 PM.

SHIFT DIFFERENTIALS:

- Shift work must run for 5 consecutive workdays.
- When 2 shifts are worked, the second shift shall receive an additional 10% of the regular rate inclusive of benefits, per hour.
- When 3 shifts are worked, the second shift shall receive 8 hours pay for 7.5 hours of work, plus an additional 10% of the regular rate inclusive of benefits, per hour. The third shift shall receive 8 hours pay for 7 hours of work, plus an additional 15% of the regular rate inclusive of benefits, per hour.
- When such hours are mandated by the project owner, a shift that starts between 8:00 PM and midnight and ends by 6:00 AM Saturday, or that starts after 8:00 PM on Sunday, provided there are consecutive hours of work within the shift, shall receive an additional 15% of the regular rate, inclusive of benefits.
- On Highway, Road, Street, and Sewer projects irregular shifts starting between 5:00 PM and 12:00 AM may be worked Monday through Friday, and shall receive an additional 15% of the regular rate, inclusive of benefits. When working with other trades that receive a higher irregular shift rate, the Operating Engineer shall also receive the higher irregular shift 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 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.
- 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 Veteran's Day.

On hazardous waste removal work or asbestos removal work, on a state or federally designated hazardous waste site, where the operating engineer is in direct contact with hazardous material and when personal protective equipment is required for respiratory, skin, and eye protection, the operating engineer shall receive an additional 20% of the hourly wage, per hour.

Effective Dates:

07/01/2021			07/01/2022
Rate	Fringe	Total	Total
59.65	35.60	95.25	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:

	07/01/2021		07/01/2022
Rate	Fringe	Total	Total
55.59	35.60	91.19	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:

	07/01/2021		07/01/2022
Rate	Fringe	Total	Total
52.93	35.60	88.53	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:

07/01/2021			07/01/2022
Rate	Fringe	Total	Total
51.40	35.60	87.00	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:

07/01/2021			07/01/2022
Rate	Fringe	Total	Total
49.64	35.60	85.24	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:

07/01/2021			07/01/2022
Rate	Fringe	Total	Total
57.21	35.60	92.81	95.06

CLASSIFICATIONS:

Lead Engineer, Foreman Engineer, Safety Engineer (Minimum)

Effective Dates:

07/01/2021			07/01/2022
Rate	Fringe	Total	Total
46.60	35.60	82.20	84.45

CLASSIFICATIONS:

Field Engineer - Rodman or Chainman

STRUCTURAL STEEL ERECTION **Rates Expiration Date :**

Effective Dates:

07/01/2021			07/01/2022
Rate	Fringe	Total	Total
56.35	35.60	91.95	94.20

CLASSIFICATIONS:

Field Engineer-Chief of Party

Vacuum Truck

Effective Dates:

07/01/2021			07/01/2022
Rate	Fringe	Total	Total
64.54	35.60	100.14	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:

07/01/2021			07/01/2022
Rate	Fringe	Total	Total
62.88	35.60	98.48	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:

07/01/2021			07/01/2022
Rate	Fringe	Total	Total
60.04	35.60	95.64	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:

07/01/2021			07/01/2022
Rate	Fringe	Total	Total
58.38	35.60	93.98	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.

TERRITORY
ENTIRE STATE

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

STRUCTURAL STEEL ERECTION Rates Expiration Date :

Effective Dates:

07/01/2021			07/01/2022
Rate	Fringe	Total	Total
60.04	35.60	95.64	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 4:30 PM.

SHIFT DIFFERENTIALS:

- Shift work must run for 5 consecutive workdays.
- When 2 shifts are worked, the second shift shall receive an additional 10% of the regular rate inclusive of benefits, per hour.
- When 3 shifts are worked, the second shift shall receive 8 hours pay for 7.5 hours of work, plus an additional 10% of the regular rate inclusive of benefits, per hour. The third shift shall receive 8 hours pay for 7 hours of work, plus an additional 15% of the regular rate inclusive of benefits, per hour.
- When such hours are mandated by the project owner, a shift that starts between 8:00 PM and midnight and ends by 6:00 AM Saturday, or that starts after 8:00 PM on Sunday, provided there are consecutive hours of work within the shift, shall receive an additional 15% of the regular rate, inclusive of benefits.
- On Highway, Road, Street, and Sewer projects irregular shifts starting between 5:00 PM and 12:00 AM may be worked Monday through Friday, and shall receive an additional 15% of the regular rate, inclusive of benefits. When working with other trades that receive a higher irregular shift rate, the Operating Engineer shall also receive the higher irregular shift 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 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.
- 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 Veteran's Day.

On hazardous waste removal work or asbestos removal work, on a state or federally designated hazardous waste site, where the operating engineer is in direct contact with hazardous material and when personal protective equipment is required for respiratory, skin, and eye protection, the operating engineer shall receive an additional 20% of the hourly wage, per hour.

Effective Dates:

	07/01/2021		07/01/2022	
Rate	Fringe	Total	Rate	Total
56.02	35.60	91.62	56.02	93.87

CLASSIFICATIONS:

Driller

Effective Dates:

	07/01/2021		07/01/2022	
Rate	Fringe	Total	Rate	Total
49.18	35.60	84.78	49.18	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:

	03/03/2021		09/01/2021	03/01/2022	03/01/2023
Rate	Fringe	Total	Total	Total	Total
46.25	33.23	79.48	80.78	83.53	86.03

CLASSIFICATIONS:

Walking Boss & Superintendent

Effective Dates:

	03/03/2021		09/01/2021	03/01/2022	03/01/2023
Rate	Fringe	Total	Total	Total	Total
45.95	33.23	79.18	80.48	83.23	85.73

CLASSIFICATIONS:

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

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

Effective Dates:

	03/03/2021		09/01/2021	03/01/2022	03/01/2023
Rate	Fringe	Total	Total	Total	Total
45.45	33.23	78.68	79.98	82.73	85.23

CLASSIFICATIONS:

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

Effective Dates:

	03/03/2021		09/01/2021	03/01/2022	03/01/2023
Rate	Fringe	Total	Total	Total	Total
47.95	33.23	81.18	82.48	85.23	87.73

CLASSIFICATIONS:

Blaster

Effective Dates:

	03/03/2021		09/01/2021	03/01/2022	03/01/2023
Rate	Fringe	Total	Total	Total	Total
44.90	33.23	78.13	79.43	82.18	84.68

CLASSIFICATIONS:

Top Labor Foreman

Effective Dates:

	03/03/2021		09/01/2021	03/01/2022	03/01/2023
Rate	Fringe	Total	Total	Total	Total
44.55	33.23	77.78	79.08	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:

	03/03/2021		09/01/2021	03/01/2022	03/01/2023
Rate	Fringe	Total	Total	Total	Total
44.40	33.23	77.63	78.93	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)

TERRITORY
ENTIRE STATE

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

FREE AIR TUNNEL JOBS Rates Expiration Date :

Effective Dates:

	03/03/2021		09/01/2021	03/01/2022	03/01/2023
Rate	Fringe	Total	Total	Total	Total
44.00	33.23	77.23	78.53	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:

	07/01/2021		07/01/2022	
Rate	Fringe	Total	Total	
54.77	35.60	90.37	92.62	

CLASSIFICATIONS:

Driller

Effective Dates:

	07/01/2021		07/01/2022	
Rate	Fringe	Total	Total	
47.93	35.60	83.53	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:

10/01/2020

Rate	Fringe	Total
41.42	15.29	56.71

CLASSIFICATIONS:

Lead Dredgerman, Operator, Leverman

Licensed Tug Operator (over 1000 HP)

Effective Dates:

10/01/2020

Rate	Fringe	Total
35.82	14.84	50.66

CLASSIFICATIONS:

Derrick Operator, Spider/Spill Barge Operator

Engineer, Electrician, Chief Welder, Chief Mate

Fill Placer, Operator II

Licensed Boat Operator

Maintenance Engineer

Effective Dates:

10/01/2020

Rate	Fringe	Total
33.72	14.67	48.39

CLASSIFICATIONS:

Certified Welder

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

Effective Dates:

10/01/2020

Rate	Fringe	Total
32.80	14.30	47.10

CLASSIFICATIONS:

Mate, Drag Barge Operator, Steward, Assistant Fill Placer

Welder

Effective Dates:

10/01/2020

Rate	Fringe	Total
31.74	14.21	45.95

CLASSIFICATIONS:

Boat Operator

Effective Dates:

10/01/2020

Rate	Fringe	Total
26.37	13.48	39.85

CLASSIFICATIONS:

Shoreman, Deckhand, Rodman, Scowman

Effective Dates:

10/01/2020

Rate	Fringe	Total
36.91	14.93	51.84

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
ENTIRE STATE

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

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:

03/19/2021			09/01/2021	03/01/2022	03/01/2023
Rate	Fringe	Total	Total	Total	Total
45.75	33.23	78.98	80.28	84.03	87.53

CLASSIFICATIONS:

Paving Foreman

Effective Dates:

03/19/2021			09/01/2021	03/01/2022	03/01/2023
Rate	Fringe	Total	Total	Total	Total
44.30	33.23	77.53	78.83	81.58	84.08

CLASSIFICATIONS:

Head Raker

Effective Dates:

03/19/2021			09/01/2021	03/01/2022	03/01/2023
Rate	Fringe	Total	Total	Total	Total
44.45	33.23	77.68	78.98	81.73	84.23

CLASSIFICATIONS:

Screedman

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

Effective Dates:

03/19/2021			09/01/2021	03/01/2022	03/01/2023
Rate	Fringe	Total	Total	Total	Total
43.90	33.23	77.13	78.43	81.18	83.68

CLASSIFICATIONS:

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

Effective Dates:

03/19/2021			09/01/2021	03/01/2022	03/01/2023
Rate	Fringe	Total	Total	Total	Total
44.00	33.23	77.23	78.53	81.28	83.78

CLASSIFICATIONS:

Milling Controller

Effective Dates:

03/19/2021			09/01/2021	03/01/2022	03/01/2023
Rate	Fringe	Total	Total	Total	Total
44.20	33.23	77.43	78.73	81.48	83.98

CLASSIFICATIONS:

Traffic Control Coordinator

Effective Dates:

03/19/2021			09/01/2021	03/01/2022	03/01/2023
Rate	Fringe	Total	Total	Total	Total
44.15	33.23	77.38	78.68	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:

	10/18/2020		10/18/2021	10/18/2022
Rate	Fringe	Total	Total	Total
32.92	29.50	62.42	64.17	65.92

CLASSIFICATIONS:

Helper (4th year helper)

Effective Dates:

	10/18/2020		10/18/2021	10/18/2022
Rate	Fringe	Total	Total	Total
41.74	29.50	71.24	73.24	75.24

CLASSIFICATIONS:

Driller

Effective Dates:

	10/18/2020		10/18/2021	10/18/2022
Rate	Fringe	Total	Total	Total
47.78	29.50	77.28	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:

	03/03/2021		09/01/2021	03/01/2022	03/01/2023
Rate	Fringe	Total	Total	Total	Total
43.50	33.23	76.73	78.03	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:

	03/03/2021		09/01/2021	03/01/2022	03/01/2023
Rate	Fringe	Total	Total	Total	Total
44.20	33.23	77.43	78.73	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:

03/03/2021			09/01/2021	03/01/2022	03/01/2023
Rate	Fringe	Total	Total	Total	Total
44.45	33.23	77.68	78.98	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:

03/03/2021			09/01/2021	03/01/2022	03/01/2023
Rate	Fringe	Total	Total	Total	Total
48.00	33.23	81.23	82.53	85.28	87.78

CLASSIFICATIONS:

"A" Rate:

blaster

Effective Dates:

03/03/2021			09/01/2021	03/01/2022	03/01/2023
Rate	Fringe	Total	Total	Total	Total
45.75	33.23	78.98	80.28	84.03	87.53

CLASSIFICATIONS:

"FOREMAN" Rate:

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

Effective Dates:

03/03/2021			09/01/2021	03/01/2022	03/01/2023
Rate	Fringe	Total	Total	Total	Total
46.75	33.23	79.98	81.28	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:

	03/10/2021		09/01/2021	03/01/2022	03/01/2023
Rate	Fringe	Total	Total	Total	Total
43.50	33.23	76.73	78.03	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:

	03/10/2021		09/01/2021	03/01/2022	03/01/2023
Rate	Fringe	Total	Total	Total	Total
43.50	33.23	76.73	78.03	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:

03/10/2021			09/01/2021	03/01/2022	03/01/2023
Rate	Fringe	Total	Total	Total	Total
44.20	33.23	77.43	78.73	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:

03/10/2021			09/01/2021	03/01/2022	03/01/2023
Rate	Fringe	Total	Total	Total	Total
44.20	33.23	77.43	78.73	81.48	83.98

CLASSIFICATIONS:

wagon or directional drill operator; drill master

Effective Dates:

03/10/2021			09/01/2021	03/01/2022	03/01/2023
Rate	Fringe	Total	Total	Total	Total
48.00	33.23	81.23	82.53	85.28	87.78

CLASSIFICATIONS:

blaster

Effective Dates:

03/10/2021			09/01/2021	03/01/2022	03/01/2023
Rate	Fringe	Total	Total	Total	Total
45.75	33.23	78.98	80.28	84.03	87.53

CLASSIFICATIONS:

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

Effective Dates:

03/10/2021			09/01/2021	03/01/2022	03/01/2023
Rate	Fringe	Total	Total	Total	Total
46.75	33.23	79.98	81.28	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:

	03/10/2021		09/01/2021	03/01/2022	03/01/2023
Rate	Fringe	Total	Total	Total	Total
44.45	33.23	77.68	78.98	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:

06/15/2021

Rate	Fringe	Total
54.64	33.55	88.19

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:

06/15/2021

Rate	Fringe	Total
54.64	33.55	88.19

CLASSIFICATIONS:

Pipeline Journeyman

Effective Dates:

06/15/2021

Rate	Fringe	Total
33.84	23.17	57.01

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:

	11/02/2020		11/01/2021	11/01/2022
Rate	Fringe	Total	Total	Total
61.50	27.23	88.73	91.23	93.73

CLASSIFICATIONS:

Pipeline Journeyman Welder

Effective Dates:

	11/02/2020		11/01/2021	11/01/2022
Rate	Fringe	Total	Total	Total
61.50	27.23	88.73	91.23	93.73

CLASSIFICATIONS:

Pipeline Journeyman

Effective Dates:

	11/02/2020		11/01/2021	11/01/2022
Rate	Fringe	Total	Total	Total
39.46	19.88	59.34	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:

	03/03/2021		09/01/2021	03/01/2022	03/01/2023
Rate	Fringe	Total	Total	Total	Total
45.75	33.23	78.98	80.28	84.03	87.53

CLASSIFICATIONS:

Asphalt Foreman

Effective Dates:

	03/03/2021		09/01/2021	03/01/2022	03/01/2023
Rate	Fringe	Total	Total	Total	Total
44.45	33.23	77.68	78.98	81.73	84.23

CLASSIFICATIONS:

Asphalt Screedman

Effective Dates:

	03/03/2021		09/01/2021	03/01/2022	03/01/2023
Rate	Fringe	Total	Total	Total	Total
44.20	33.23	77.43	78.73	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:

	03/03/2021		09/01/2021	03/01/2022	03/01/2023
Rate	Fringe	Total	Total	Total	Total
43.50	33.23	76.73	78.03	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 7:00 AM and 6:30 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:

11/29/2020

Rate	Fringe	Total
57.30	39.54	96.84

CLASSIFICATIONS:

Chief Lineman

Effective Dates:

11/29/2020

Rate	Fringe	Total
54.06	37.30	91.36

CLASSIFICATIONS:

Journeyman Lineman

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

Effective Dates:

11/29/2020

Rate	Fringe	Total
54.06	37.30	91.36

CLASSIFICATIONS:

Special License Operator

Effective Dates:

11/29/2020

Rate	Fringe	Total
53.52	36.92	90.44

CLASSIFICATIONS:

Transit Man

Effective Dates:

11/29/2020

Rate	Fringe	Total
51.90	35.80	87.70

CLASSIFICATIONS:

Line Equipment Operator

Effective Dates:

11/29/2020

Rate	Fringe	Total
45.41	31.32	76.73

CLASSIFICATIONS:

Dynamite Man

Effective Dates:

11/29/2020

Rate	Fringe	Total
67.57	46.62	114.19

CLASSIFICATIONS:

General Foreman

Effective Dates:

11/29/2020

Rate	Fringe	Total
62.17	42.88	105.05

CLASSIFICATIONS:

Assistant General Foreman

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

Effective Dates:

11/29/2020

Rate	Fringe	Total
60.55	41.77	102.32

CLASSIFICATIONS:

Line Foreman

Effective Dates:

11/29/2020

Rate	Fringe	Total
43.79	30.20	73.99

CLASSIFICATIONS:

Street Light Mechanical Leader

Effective Dates:

11/29/2020

Rate	Fringe	Total
41.63	28.71	70.34

CLASSIFICATIONS:

Groundman Winch Operator

Effective Dates:

11/29/2020

Rate	Fringe	Total
41.63	28.71	70.34

CLASSIFICATIONS:

Groundman Truck Operator

Effective Dates:

11/29/2020

Rate	Fringe	Total
41.08	28.35	69.43

CLASSIFICATIONS:

Street Light Mechanic

Effective Dates:

11/29/2020

Rate	Fringe	Total
41.08	28.35	69.43

CLASSIFICATIONS:

Line Equipment Mechanic

TERRITORY
ENTIRE STATE

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

ELECTRICIAN- UTILITY WORK (NORTH) Rates Expiration Date :

Effective Dates:

11/29/2020

Rate	Fringe	Total
35.14	24.24	59.38

CLASSIFICATIONS:

Groundman 2nd Year

Effective Dates:

11/29/2020

Rate	Fringe	Total
32.44	22.36	54.80

CLASSIFICATIONS:

Groundman 1st Year

Effective Dates:

11/29/2020

Rate	Fringe	Total
53.52	36.92	90.44

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:

12/02/2020

Rate	Fringe	Total
63.56	51.00	114.56

CLASSIFICATIONS:

General Foreman

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

Effective Dates:

12/02/2020

Rate	Fringe	Total
56.43	46.88	103.31

CLASSIFICATIONS:

Foreman

Effective Dates:

12/02/2020

Rate	Fringe	Total
53.46	45.13	98.59

CLASSIFICATIONS:

Small Job Foreman

Effective Dates:

12/02/2020

Rate	Fringe	Total
49.50	42.79	92.29

CLASSIFICATIONS:

Heavy Equipment Operator

Effective Dates:

12/02/2020

Rate	Fringe	Total
49.50	42.79	92.29

CLASSIFICATIONS:

Cable Splicer

Effective Dates:

12/02/2020

Rate	Fringe	Total
49.50	42.79	92.29

CLASSIFICATIONS:

Journeyman Lineman

Effective Dates:

12/02/2020

Rate	Fringe	Total
49.50	42.79	92.29

CLASSIFICATIONS:

Journeyman Welder

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

Effective Dates:

12/02/2020

Rate	Fringe	Total
49.50	42.79	92.29

CLASSIFICATIONS:

Journeyman Painter

Effective Dates:

12/02/2020

Rate	Fringe	Total
39.60	36.94	76.54

CLASSIFICATIONS:

Light Equipment Operator

Effective Dates:

12/02/2020

Rate	Fringe	Total
34.65	34.00	68.65

CLASSIFICATIONS:

Groundman Truck Driver

Effective Dates:

12/02/2020

Rate	Fringe	Total
32.18	32.55	64.73

CLASSIFICATIONS:

Groundman 3rd Year

Effective Dates:

12/02/2020

Rate	Fringe	Total
29.70	31.09	60.79

CLASSIFICATIONS:

Groundman 2nd Year

Effective Dates:

12/02/2020

Rate	Fringe	Total
27.23	29.62	56.85

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:

12/02/2020

Rate	Fringe	Total
21.78	26.40	48.18

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:

	03/03/2021		09/01/2021	03/01/2022	03/01/2023
Rate	Fringe	Total	Total	Total	Total
69.38	33.23	102.61	104.31	107.86	111.19

CLASSIFICATIONS:

Walking Boss & Superintendent

Effective Dates:

	03/03/2021		09/01/2021	03/01/2022	03/01/2023
Rate	Fringe	Total	Total	Total	Total
68.93	33.23	102.16	103.86	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:

03/03/2021			09/01/2021	03/01/2022	03/01/2023
Rate	Fringe	Total	Total	Total	Total
68.18	33.23	101.41	103.11	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:

03/03/2021			09/01/2021	03/01/2022	03/01/2023
Rate	Fringe	Total	Total	Total	Total
71.93	33.23	105.16	106.86	110.41	113.74

CLASSIFICATIONS:

Blaster

Effective Dates:

03/03/2021			09/01/2021	03/01/2022	03/01/2023
Rate	Fringe	Total	Total	Total	Total
67.35	33.23	100.58	102.28	105.83	109.16

CLASSIFICATIONS:

Top Labor Foreman

Effective Dates:

03/03/2021			09/01/2021	03/01/2022	03/01/2023
Rate	Fringe	Total	Total	Total	Total
66.83	33.23	100.06	101.76	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:

03/03/2021			09/01/2021	03/01/2022	03/01/2023
Rate	Fringe	Total	Total	Total	Total
66.60	33.23	99.83	101.53	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)

TERRITORY
ENTIRE STATE

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

HEAVY & GENERAL LABORERS- NEW TRANS HUDSON TUNNELS **Rates Expiration Date :**

Effective Dates:

	03/03/2021		09/01/2021	03/01/2022	03/01/2023
Rate	Fringe	Total	Total	Total	Total
66.00	33.23	99.23	100.93	104.48	107.81

CLASSIFICATIONS:

All others (including Powder Watchman, Change House Attendant, Top Laborer, Job Steward)

Table of Contents - Technical Specifications
Leak Repairs and Other Work at the
Board of Elections Building, Elizabeth, NJ

Section	Title
01100	SUMMARY
01300	SUBMITTAL PROCEDURES
01320	CONSTRUCTION PROGRESS DOCUMENTATION
01500	CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS
01700	PROJECT CLOSEOUT
02000	MOBILIZATION
02050	DEMOLITION
02100	SITE PREPARATION
02200	EARTHWORK
02222	EXCAVATION-BACKFILL FOR UTILITIES
02223	EXCAVATION-BACKFILL FOR PAVEMENT
02227	AGGREGATE MATERIALS
02500	SOIL & AGGREGATE BASE COURSE
02510	BITUMINOUS CONCRETE BASE & SURFACE COURSES
02525	CURBS AND SIDEWALKS
02601	UTILITY TEST PITS
02081	Asbestos abatement
03300	Cast-in-place concrete
14002-079200	Joint sealants
14002-090123	Interior painting
15410	Plumbing piping
15411	Hangers and supports
15412	Valves
15414	Tests
15415	Drainage
15431	Tags, charts and identification
15890	HVAC cleaning
16010	Electrical work
16020	Temporary light and power
16075	Electrical identification
16120	Wiring systems
16130	Raceways and boxes
16501	Lamps, ballast and accessories

SECTION 01100
SUMMARY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following items:
 - 1. Work Covered by the Contract Documents
 - 2. Work Sequence
 - 3. Use of Premises
 - 4. Owner's Occupancy Requirements
 - 5. Safety Evaluations

1.3 WORK COVERED BY CONTRACT DOCUMENTS

- A. Project Identification: Corrective work to prevent water leak penetration into Facility, and other repairs
 - 1. Project Location: 271 North Broad Street
Elizabeth, NJ 07027
 - 2. Owner: County of Union

- B. The Work includes but is not limited to site work (excavation, concrete, asphalt paving, fence, the installation of pullboxes, conduits, interconnecting cable, etc. as shown on the drawings and called for in the specifications.

1.4 WORK SEQUENCE

- A. The Contractor may sequence the Work as he chooses provided that:
 - 1. There are no interruptions to the normal operations of the Facility
 - 2. the sequence is approved by the County Engineer
 - 3. work is completed within the contract duration

1.5 USE OF PREMISES

- B. General: Sequence the work so as to not disrupt the buildings normal operations.
- C. Driveways and Entrances: Keep driveways, parking areas and entrances serving the premises clear and available to the Owner, Owner's employees and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
 - 1. Schedule deliveries to minimize use of driveways and entrances.
 - 2. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
 - 3. A minimum notice of (14) fourteen days is required to bring a crane on site.
 - 4. A minimum notice of (14) fourteen days is required for a restriction of or a change in internal traffic flow.
- D. Building Exits: Maintain and keep clear building exits and adjacent existing structures.
- E. Contractor will have limited access to the facility. Contractor shall provide for storage of material and debris outside the building.

1.6 OWNER'S OCCUPANCY REQUIREMENTS

- F. Owner Occupancy: Owner will occupy the site and buildings adjacent to the Work area during the entire construction period. 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.
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.
 2. Provide not less than (14) fourteen days' notice to Owner of activities that will affect Owner's operations.

1.7 WORK RESTRICTIONS

- G. On-site Work Hours: **Work shall be generally performed between the hours of 8am to 5:00pm, night work requires owner's approval.** Sequence the work so as to not disrupt the buildings normal operations.
1. All work shall comply with local noise ordinances.
- H. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated.
1. Notify Owner not less than 10 business days in advance of proposed utility interruptions.
 2. Do not proceed with utility interruptions without Owner's written permission.
 3. A utility interruption to occur outside of Owner's normal operating hours.
- I. Nonsmoking Building: Smoking is not permitted within the building or within 25 feet of entrances, operable windows, or outdoor air intakes.

END OF SECTION

SECTION 01300
SUBMITTAL PROCEDURES

PART 1 - **GENERAL**

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- B. This Section includes administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other miscellaneous submittals.

1.3 DEFINITIONS

- C. Action Submittals: Written and graphic information that requires Owner's responsive action.

1.4 SUBMITTAL PROCEDURES

- D. 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. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.

- a. The Owner reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

- E. Processing Time: Allow enough time for submittal review, including time for resubmittals, as follows. Time for review shall commence on the Owner's receipt of submittal.

1. Initial Review: Allow (10) ten days for initial review of each submittal. Allow additional time if processing must be delayed to permit coordination with subsequent submittals. The Owner will advise Contractor

- when a submittal being processed must be delayed for coordination.
2. If intermediate submittal is necessary, process it in same manner as initial submittal.
 3. Allow (10) ten days for processing each resubmittal.
 4. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing.
- F. Identification: Place a permanent label or title block on each submittal for identification.
1. Indicate name of firm or entity that prepared each submittal on label or title block.
 2. Provide a space approximately on label or beside title block to record Contractor's review and approval markings and action taken by the Owner.
 3. Include the following information on label for processing and recording action taken:
 - a. Project name.
 - b. Date.
 - c. Name and address of Contractor.
 - d. Name and address of subcontractor.
 - e. Name and address of supplier.
 - f. Name of manufacturer.
 - g. Unique identifier, including revision number.
 - h. Number and title of appropriate Specification Section.
 - i. Drawing number and detail references, as appropriate.
 - j. Other necessary identification.
- G. Deviations: Highlight, encircle, or otherwise identify deviations from the Contract Documents on submittals.
- H. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- I. Use for Construction: Use only final submittals with indicating action taken by Owner in connection with construction.

PART 2 - PRODUCTS

2.01 ACTION SUBMITTALS

- A. General: Prepare and submit Action Submittals required by individual Specification Sections.
 - 1. Number of Copies: Submit (3) three copies of each submittal, unless otherwise indicated. Owner will return (1) one copy.

- B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
 - 1. If information must be specially prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.
 - 2. Mark each copy of each submittal to show which products and options are applicable.
 - 3. Include the following information, as applicable:
 - a. Manufacturer's written recommendations.
 - b. Manufacturer's product specifications.
 - c. Manufacturer's installation instructions.
 - d. Standard color charts.
 - e. Manufacturer's catalog cuts.
 - f. Pertinent dimensioning, general construction, component connections and locations, anchorage methods and locations, hardware locations and installation details.
 - g. Standard product operating and maintenance manuals.
 - h. Compliance with recognized trade association standards.
 - i. Compliance with recognized testing agency standards.
 - j. Application of testing agency labels and seals.
 - k. Notation of coordination requirements.

- C. Shop Drawings:
 - 1. Preparation: Include the following information, as applicable:
 - a. Dimensions.
 - b. Identification of products.
 - c. Fabrication and installation drawings.
 - d. Roughing-in and setting diagrams.
 - e. Wiring diagrams showing field-installed wiring, including power, signal, and control wiring.

- f. Shopwork manufacturing instructions.
 - g. Templates and patterns.
 - h. Schedules.
 - i. Design calculations.
 - j. Compliance with specified standards.
 - k. Notation of coordination requirements.
 - l. Notation of dimensions established by field measurement.
2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches (215 by 280 mm) but no larger than 30 by 40 inches (750 by 1000 mm).
 3. Number of Copies: Submit (3) three copies of each submittal, only one will be returned.
- D. Samples: Prepare physical units of materials or products, including the following:
1. 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.
 2. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from the same material to be used for the Work, cured and finished in a manner specified, and physically identical with the product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
 3. Preparation: Mount, display, or package Samples in manner specified to facilitate review of qualities indicated. Prepare Samples to match Owner's sample where so indicated. Attach label on unexposed side that includes the following:
 - a. Generic description of Sample.
 - b. Product name or name of manufacturer.
 - c. Sample source.
 4. Additional Information: On an attached separate sheet, prepared on Contractor's letterhead, provide the following:
 - a. Size limitations.

- b. Compliance with recognized standards.
 - c. Availability.
 - d. Delivery time.
5. Submit Samples for review of kind, color, pattern, and texture for a final check of these characteristics with other elements and for a comparison of these characteristics between final submittal and actual component as delivered and installed.
- a. If variation in color, pattern, texture, or other characteristic is inherent in the product represented by a Sample, submit sets of paired units that show approximate limits of the variations.
 - b. Refer to individual Specification Sections for requirements for Samples that illustrate workmanship, fabrication techniques, details of assembly, connections, operation, and similar construction characteristics.
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.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

- A. Review each submittal and check for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to the Owner.
- B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement

certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 OWNER'S ACTION

- C. General: Owner will not review submittals that do not bear Contractor's approval stamp and will return them without action.
- D. Action Submittals: Owner will review each submittal, make marks to indicate corrections or modifications required, and return it. Owner will indicate action to be taken.
- E. Submittals not required by the Contract Documents will not be reviewed and may be discarded.

END OF SECTION

SECTION 01320
CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- B. This Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:

1. Preliminary Construction Schedule.
2. Contractor's Construction Schedule.
3. Submittals Schedule.

- C. Related Sections include the following:

1. Division 1 Section "Payment Procedures" for submitting the Schedule of Values.
2. Division 1 Section "Project Management and Coordination" for submitting and distributing meeting and conference minutes.
3. Division 1 Section "Submittal Procedures" for submitting schedules and reports.
4. Division 1 Section "Photographic Documentation" for submitting construction photographs.

1.3 DEFINITIONS

- D. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.

1. Critical activities are activities on the critical path. They must start and finish on the planned early start and finish times.
2. Predecessor activity is an activity that must be completed before a given activity can be started.

- E. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of Project.
- F. Critical Path: The longest continuous chain of activities through the network schedule that establishes the minimum overall Project duration and contains no float.
- G. Event: The starting or ending point of an activity.
- H. Float: The measure of leeway in starting and completing an activity.
 - 1. Float time is not for the exclusive use or benefit of either Owner or Contractor, but is a jointly owned, expiring Project resource available to both parties as needed to meet schedule milestones and Contract completion date.
 - 2. Free float is the amount of time an activity can be delayed without adversely affecting the early start of the following activity.
 - 3. Total float is the measure of leeway in starting or completing an activity without adversely affecting the planned Project completion date.
- I. Fragnet: A partial or fragmentary network that breaks down activities into smaller activities for greater detail.
- J. Major Area: A story of construction, a separate building, or a similar significant construction element.
- K. Milestone: A key or critical point in time for reference or measurement.
- L. Network Diagram: A graphic diagram of a network schedule, showing activities and activity relationships.

1.4 SUBMITTALS

- M. Submittals Schedule: Submit four copies of schedule. Arrange the following information in a tabular format:
 - 1. Scheduled date for first submittal.
 - 2. Specification Section number and title.
 - 3. Submittal category (action or informational).

4. Name of subcontractor.
5. Description of the Work covered.
6. Scheduled date for Owner final release or approval.

N. Contractor's Construction Schedule: Submit four printed copies of initial schedule, large enough to show entire schedule for entire construction period.

1. Submit an electronic copy of schedule, sorted by early start then total float.

1.5 QUALITY ASSURANCE

O. Prescheduling Conference: Conduct conference at Project site to review methods and procedures related to the execution of the work, include but not limited to, the following:

1. Discuss constraints, including phasing, work stages, area separations, interim milestones, temporary protection, and Owner occupancy.
2. Review schedule for work of Owner's separate contracts.
3. Review time required for review of submittals and resubmittals.
4. Review requirements for tests and inspections by independent testing and inspecting agencies.
5. Review time required for completion and startup procedures.
6. Review and finalize list of construction activities to be included in schedule.
7. Review submittal requirements and procedures.
8. Review procedures for updating schedule.

1.6 COORDINATION

P. Coordinate preparation and processing of schedules and reports with performance of construction activities and with scheduling and reporting of separate contractors.

Q. Coordinate Contractor's Construction Schedule with the Schedule of Values, list of subcontracts, Submittals Schedule, progress reports, payment requests, and other required schedules and reports.

1. Secure time commitments for performing critical elements of the Work from parties involved.

2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.
- R. Auxiliary Services: Cooperate with auxiliary services requested, including access to Project site and use of temporary facilities including temporary lighting.

PART 2 - PRODUCTS

2.1 SUBMITTALS SCHEDULE

- A. Preparation: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, resubmittal, ordering, manufacturing, fabrication, and delivery when establishing dates.
1. Coordinate Submittals Schedule with list of subcontracts, the Schedule of Values, and Contractor's Construction Schedule.
 2. Final Submittal: Submit concurrently with the first complete submittal of Contractor's Construction Schedule.
 - a. At Contractor's option, show submittals on the Preliminary Construction Schedule, instead of tabulating them separately.

2.2 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

- B. Procedures: Comply with procedures contained in AGC's "Construction Planning & Scheduling."
- C. Time Frame: Extend schedule from date established for the Notice to Proceed to date of Final Completion.
1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized.
- D. Activities: Treat each story or separate area as a separate numbered activity for each principal element of the Work. Comply with the following:

1. Activity Duration: Define activities so no activity is longer than (3) three days, unless specifically allowed by Owner.
 2. Procurement Activities: Include procurement process activities for long lead items and major items, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.
 3. Submittal Review Time: Include review and resubmittal times indicated in Division 1 Section "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's Construction Schedule with Submittals Schedule.
 4. Startup and Testing Time: Include time for startup and testing.
 5. Substantial Completion: Indicate completion in advance of date established for Substantial Completion, and allow time for Owner's administrative procedures necessary for certification of Substantial Completion.
- E. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.
1. Phasing: Arrange list of activities on schedule by phase.
 2. Work by Owner: Include a separate activity for each portion of the Work performed by Owner.
 3. Work Restrictions: Show the effect of the following items on the schedule:
 - a. Limitations of continued occupancies.
 - b. Uninterruptible services.
 - c. Partial occupancy before Substantial Completion.
 - d. Use of premises restrictions.
 - e. Seasonal variations.
 - f. Environmental control.

4. Work Stages: Indicate important stages of construction for each major portion of the Work, including, but not limited to, the following:

- a. Subcontract awards.
- b. Submittals.
- c. Purchases.
- d. Mockups.
- e. Fabrication.
- f. Sample testing.
- g. Deliveries.
- h. Installation.
- i. Tests and inspections.
- j. Adjusting.
- k. Curing.
- l. Startup and placement into final use and operation.

5. Area Separations: Identify each major area of construction for each major portion of the Work.

F. Contract Modifications: For each proposed contract modification and concurrent with its submission, prepare a time-impact analysis using fragnets to demonstrate the effect of the proposed change on the overall project schedule.

G. Computer Software: Prepare schedules using a program that has been developed specifically to manage construction schedules.

2.3 CONTRACTOR'S CONSTRUCTION SCHEDULE (CPM SCHEDULE)

A. General: Prepare network diagrams using AON (activity-on-node) format.

B. CPM Schedule: Prepare Contractor's Construction Schedule using a CPM network analysis diagram.

1. Develop network diagram in sufficient time to submit CPM schedule so it can be accepted for use no later than [14] <twenty-one> days after date established for Notice to Proceed.

2. Conduct educational workshops to train and inform key Project personnel, including subcontractors' personnel, in proper methods of providing data and using CPM schedule information.

3. Establish procedures for monitoring and updating CPM schedule and for reporting progress. Coordinate procedures with progress meeting and payment request dates.
 4. Use "one workday" (at the minimum) as the unit of time.
- C. CPM Schedule Preparation: Prepare a list of all activities required to complete the Work.
1. Activities: Indicate the estimated time duration, sequence requirements, and relationship of each activity in relation to other activities. Include estimated time frames for the following activities:
 - a. Preparation and processing of submittals.
 - b. Purchase of materials.
 - c. Delivery.
 - d. Fabrication.
 - e. Installation.
 2. Processing: Process data to produce output data or a computer-drawn, time-scaled network. Revise data, reorganize activity sequences, and reproduce as often as necessary to produce the CPM schedule within the limitations of the Contract Time.
 3. Format: Mark the critical path. Locate the critical path near center of network; locate paths with most float near the edges.
 - a. Subnetworks on separate sheets are permissible for activities clearly off the critical path.
- D. Initial Issue of Schedule: Prepare initial network diagram from a list of straight "early start-total float" sort. Identify critical activities. Prepare tabulated reports showing the following:
1. Contractor or subcontractor and the Work or activity.
 2. Description of activity.
 3. Principal events of activity.
 4. Immediate preceding and succeeding activities.
 5. Early and late start dates.
 6. Early and late finish dates.
 7. Activity duration in workdays.
 8. Total float or slack time.
 9. Average size of workforce.

- E. Schedule Updating: Concurrent with making revisions to schedule, prepare tabulated reports showing the following:
 - 1. Identification of activities that have changed.
 - 2. Changes in early and late start dates.
 - 3. Changes in early and late finish dates.
 - 4. Changes in activity durations in workdays.
 - 5. Changes in the critical path.
 - 6. Changes in total float or slack time.
 - 7. Changes in the Contract Time.

- F. Value Summaries: Prepare two cumulative value lists, sorted by finish dates.
 - 1. In first list, tabulate activity number, and early finish date.
 - 2. In second list, tabulate activity number, and late finish date.
 - 3. In subsequent issues of both lists, substitute actual finish dates for activities completed as of list date.

PART 3 - EXECUTION

3.01 CONTRACTOR'S CONSTRUCTION SCHEDULE

- A. Scheduling Consultant: Engage a consultant to provide planning, evaluation, and reporting using CPM scheduling.
 - 1. In-House Option: If Contractor employs skilled personnel with experience in CPM scheduling and reporting techniques a Scheduling Consultant will not be required. Submit qualifications.
 - 2. Meetings: Scheduling consultant shall attend all meetings related to Project progress, alleged delays, and time impact.

- B. Contractor's Construction Schedule Updating: At monthly intervals to reflect actual construction progress and activities. Issue schedule in advance of regularly scheduled progress meeting.
 - 1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.

2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
 3. As the Work progresses, indicate Actual Completion percentage for each activity.
- C. Distribution: Distribute copies of approved schedule to Owner, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.
1. Post copies in Project meeting rooms and temporary field offices.
 2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

END OF SECTION

SECTION 01500
CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- B. Work of this Section includes all labor, materials, equipment and services necessary to complete the construction facilities and temporary controls as shown on the drawings and specified herein, including but not limited to, the following:
1. Traffic Safety Services
 2. Project Identification
 3. Material Hoists
 4. Construction fence.
 5. Fire protection.
 6. Temporary Light and Power
 7. Temporary toilets
 8. Security
 9. Water and snow control.
 - 10 Environmental controls

PART 2 PRODUCTS

2.01 GENERAL

- A. Arrange for and provide temporary facilities and controls as specified herein and as required for the proper and expeditious prosecution of the work. Pay all costs, except as otherwise specified, until final acceptance of the work unless the Owner makes arrangements for the use of completed portions of the work after substantial completion.
- B. Make all temporary connections to utilities and services in locations acceptable to the local authorities having jurisdiction thereof; furnish all necessary labor and materials, and make all installations in a manner subject to the acceptance of such authorities; maintain such connections; remove the temporary installation and

connections when no longer required; restore the services and sources of supply to proper operating condition.

- C. Unless otherwise noted, pay all costs for temporary electrical power, temporary water, and temporary heating; provide metering as necessary.
- D. A Staging Plan shall be submitted by the Contractor for approval by the Owner for each phase of the Project. The Staging shall locate all temporary facilities and services, including parking for the Contractor's employees and shall allot ground space to Subcontractors for storage of materials, and the erection of sheds and tool houses. Materials and equipment can only be stored in the staging area. No parking for Contractor's or Subcontractors' employees' vehicles will be allowed in undesignated parking areas. Contractor shall find and pay for his own, if needed. The staging area shall be maintained in good repair, free of mud and standing water, and passable at all times. All materials stored within the project site are the responsibility of the Contractor. At the completion of the work, the staging areas shall be restored to their original condition, gravel removed, topsoil replaced and graded and re-seeded.

2.2 TRAFFIC SAFETY SERVICES

- A. Uniformed Police Officers shall be employed by the Contractor for the protection of any equipment entering, leaving, or crossing active traffic lanes, or as may be required for the routing of traffic around or through the construction. The uniformed police officers shall be employed continuously for the full time such conditions shall exist as determined by the Owner's representatives.

2.3 PROJECT IDENTIFICATION

- A. No signs or advertisements will be allowed to be displayed on the premises without the approval of the Owner.
- B. Erect the construction sign on the site where directed by the Owner approximately 4 ft. x 8 ft. in size, of 3/4 in. plywood with suitable frame, moldings, and supports. Use Douglas Fir Overlaid Plywood, Grade B-B high density, exterior, good two sides, complying with PS-1. The sign shall be primed and given two coats of approved white paint. Lettering shall be black of a type, size, and layout as directed and approved by the Owner. Sign shall contain the name of the building and the Owner.

2.4 MATERIAL HOIST

- A. Provide a material hoist as required for use by all trades. Provide all necessary guards, signals, safety devices, and so on, required for safe operations, and suitable runways from the hoists to each floor level and roof. The construction and operation of the material hoist shall comply with all applicable requirements of ANSI A10.5, the ACG Manual of Accident Prevention in Construction and to all applicable state and municipal codes. Prohibit the use of the material hoist for transporting personnel.

2.5 PERMANENT AND TEMPORARY CONSTRUCTION FENCE (AT OWNER'S DISCRETION)

- A. Provide and maintain an 8-foot high, post-driven chain link fence with top, middle and bottom rail to enclose the area at the job site and to guard and close effectively the designated area. Portable self-standing chain link fence panels with peg stabilizer brackets will be acceptable only when required to prevent damage to paved areas. Provide gates with 6" posts at locations of existing and proposed site ingress/ egress and where required for access to the enclosed area. Gates shall be cross-braced, hung on heavy strap hinges, and shall have hasps and padlocks.
 1. The temporary construction fence shall be modified as necessary prior to the start of each phase and as directed by the Owner. During periods of contractor in-activity the temporary fence shall be relocated so as to provide the maximum amount of parking spaces for the Owner's use.

2.6 FIRE PROTECTION

- A. Provide and maintain adequate fire protection, ready for instant use, distributed around the project.
- B. Make arrangements for periodical inspection by local fire protection authorities and insurance underwriters inspections. Cooperate with said authorities and promptly carry out their recommendations.
- C. Open fire will not be permitted within the building enclosure or on the project site.

2.7 TEMPORARY LIGHT AND POWER

- A. Provide all equipment necessary for temporary power and lighting; and pay all charges for this equipment, the installation thereof, and for current used.
 - In addition to the electrical service, provide power distribution as required throughout structure. The terminations of power distribution shall be at convenient locations in the building. Terminations shall be provided

for each voltage supply complete with circuit breakers, disconnect switches, and other electrical devices as required to protect the power supply system.

- B. A temporary lighting system shall be furnished, installed, and maintained as required to satisfy minimum requirements of safety and security. The temporary lighting system shall afford general illumination in all building areas and shall supply not less than 150 watt lamps on 30' centers both directions of floor area for illumination in the areas of the building where work is being performed.
- C. All temporary equipment and wiring for power and lighting shall be in accordance with the applicable provisions of the governing codes. All temporary wiring shall be maintained in a safe manner and used so as not to constitute a hazard to persons or property.
- D. When the permanent electrical power and lighting systems are in operating condition, they may be used for temporary power and lighting for construction purposes, provided that the Contractor assumes full responsibility for the entire power and lighting system, and pays costs for power, operations, maintenance, and restoration of the system.

2.8 TEMPORARY TOILETS

- A. Provide and maintain in a sanitary condition enclosed weathertight toilets for the use of all construction personnel at a location within the contract limits. Upon completion of the work, toilets shall be removed.

2.9 SECURITY

- A. Provide all temporary enclosures required for protecting the project from the exterior, for providing passageways, for the protection of openings both exterior and interior, and any other location where temporary enclosures and protection may be required.
- B. Take adequate precautions against fire; keep flammable material at an absolute minimum; and ensure that such material is properly handled and stored. Except as otherwise provided herein, do not permit fires to be built or open salamanders to be used in any part of the work.

2.10 WATER AND SNOW CONTROL

- A. From the commencement to the construction of the completion of the work, keep all parts of the site and the

project free from accumulation of water, and supply, maintain, and operate all necessary pumping and bailing equipment.

- B. Remove snow and ice as necessary for the protection and prosecution of the work, and protect the work against weather damage.
- C. The Contractor shall take over responsibility for site drainage upon entering the premises and shall maintain such drainage until completion of the work so as not to adversely affect the adjacent areas.

2.15 ENVIRONMENTAL CONTROLS

- A. The Contractor shall comply with all applicable Federal, State and local laws, regulations, ordinances, codes and standards concerning environment control. Particular attention shall be given, without limitations, to:
 - 1. Minimization of dust, containment of chemical vapors, control of engine exhaust gases, and control of smoke from temporary heaters.
 - 2. Reduction of water pollution by control of sanitary facilities, proper storage of fuels and other potential contaminants, and prevention of siltation from land erosion.
 - 3. Minimization of noise levels.
 - 4. Proper and legal disposal, off site unless otherwise provided, of waste and spoil resulting from construction activities.

PART 3 EXECUTION

3.1 REMOVAL

- A. Maintain all temporary facilities and controls as long as needed for the safe and proper completion of the work. Remove all such temporary facilities and controls as rapidly as progress of the work will permit or as directed by the Owner.

END OF SECTION

SECTION 01700
PROJECT CLOSEOUT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements for project closeout, including but not limited to:
 - 1. Inspection procedures.
 - 2. Project record document submittal.
 - 3. Operating and maintenance manual submittal.
 - 4. Submittal of warranties.
 - 5. Final cleaning.

1.3 SUBSTANTIAL COMPLETION

- A. Preliminary Procedures: Before requesting inspection for certification of Substantial Completion, complete the following. List exceptions in the request.
 - 1. In the Application for Payment that coincides with, or first follows, the date Substantial Completion is claimed, show 100 percent completion for the portion of the Work claimed as substantially complete. Include supporting documentation for completion as indicated in these Contract Documents and a statement showing an accounting of changes to the Contract Sum.
 - a. If 100 percent completion cannot be shown, include a list of incomplete items, the value of incomplete construction, and reasons the Work is not complete.

2. Submit specific warranties, workmanship bonds, maintenance agreements, final certifications and similar documents.
 3. Obtain and submit releases enabling the Owner unrestricted use of the Work and access to services and utilities; include occupancy permits, operating certificates and similar releases.
 4. Submit record drawings, maintenance manuals, and similar final record information.
 5. Deliver tools, spare parts, extra stock, and similar items.
 6. Complete start-up testing of systems, and instruction of the Owner's operating and maintenance personnel. Discontinue or change over and remove temporary facilities from the site, along with construction tools, mock-ups, and similar elements.
 7. Complete final clean up requirements, including touchup painting. Touch-up and otherwise repair and restore marred exposed finishes.
- B. Inspection Procedures: On receipt of a request for inspection, the Engineer will either proceed with inspection or advise the Contractor of unfilled requirements. The Engineer will prepare the Certificate of Substantial Completion following inspection, or advise the Contractor of construction that must be completed or corrected before the certificate will be issued.
1. The Engineer will repeat inspection when requested and assured that the Work has been substantially completed.
 2. Results of the completed inspection will form the basis of requirements for final acceptance.

1.4 RECORD DOCUMENT SUBMITTALS

- A. General: Do not use record documents for construction purposes; protect from deterioration and loss in a secure, fire-resistive location; provide access to record documents for the Engineer's reference during normal working hours.
- B. Record Drawings: Maintain a clean, undamaged set of blue or black line white-prints of Contract Drawings and Shop Drawings. Mark the set to show the actual installation where the installation varies substantially from the Work as originally shown. Mark whichever drawing is most

capable of showing conditions fully and accurately; where Shop Drawings are used, record a cross-reference at the corresponding location on the Contract Drawings. Give particular attention to concealed elements that would be difficult to measure and record at a later date.

1. Mark record sets with red erasable pencil; use other colors to distinguish between variations in separate categories of the Work.
 2. Mark new information that is important to the Owner, but was not shown on Contract Drawings or Shop Drawings.
 3. Note related Change Order numbers where applicable.
 4. Organize record drawing sheets into manageable sets, bind with durable paper cover sheets, and print suitable titles, dates and other identification on the cover of each set.
- C. Record Specifications: Maintain one complete copy of the Project Manual, including addenda, and one copy of other written construction documents such as Change Orders and modifications issued in printed form during construction. Mark these documents to show substantial variations in actual Work performed in comparison with the text of the Specifications and modifications. Give particular attention to substitutions, selection of options and similar information on elements that are concealed or cannot otherwise be readily discerned later by direct observation. Note related record drawing information and Product Data.
1. Upon completion of the Work, submit record Specifications to the Engineer for the Owner's records.
- D. Record Product Data: Maintain one copy of each Product Data submittal. Mark these documents to show significant variations in actual Work performed in comparison with information submitted. Include variations in products delivered to the site, and from the manufacturer's installation instructions and recommendations. Give particular attention to concealed products and portions of the Work which cannot otherwise be readily discerned later by direct observation. Note related Change Orders and mark-up of record drawings and Specifications.
1. Upon completion of mark-up, submit complete set of record Product Data to the Engineer for the Owner's records.

- F. Miscellaneous Record Submittals: Refer to other Specification Sections for requirements of miscellaneous record-keeping and submittals in connection with actual performance of the Work. Immediately prior to the date or dates of Substantial Completion, complete miscellaneous records and place in good order, properly identified and bound or filed, ready for continued use and reference. Submit to the Owner's records.
- G. Maintenance Manuals: Submit 2 copies of each manual to Owner. Organize operating and maintenance data into suitable sets of manageable size. Bind properly indexed data in individual heavy-duty 2-inch, 3-ring vinyl-covered binders, with pocket folders for folded sheet information. Mark appropriate identification on front and spine of each binder. Include the following types of information:
1. Emergency instructions.
 2. Spare parts list.
 3. Copies of warranties.
 4. Wiring diagrams.
 5. Recommended "turn around" cycles.
 6. Inspection procedures.
 7. Shop Drawings and Product Data.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 CLOSEOUT PROCEDURES

- A. Operating and Maintenance Instructions: Arrange for each installer of equipment that requires regular maintenance to meet with the Owner's personnel to provide instruction in proper operation and maintenance. If installers are not experienced in procedures, provide instruction by manufacturer's representatives. Include a detailed review of the following items:
1. Maintenance manuals.
 2. Record documents.
 3. Spare parts and materials.
 4. Tools.
 5. Identification systems.
 6. Hazards.
 7. Cleaning.
 8. Warranties and bonds.
 9. Maintenance agreements and similar continuing commitments.

- B. As part of instruction for operating equipment, demonstrate required procedures.

3.2 **FINAL CLEANING**

- A. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to the condition expected in a normal, commercial building cleaning and maintenance program. Comply with manufacturer's instructions.
 - 1. Complete the following cleaning operations before requesting inspection for Certification of Substantial Completion.
 - a. Remove labels that are not permanent labels.
 - b. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compound and other substances that are noticeable vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials.
 - c. Clean exposed exterior and interior hard-surfaced finishes to a dust-free condition, free of stains, films and similar foreign substances. Restore reflective surfaces to their original reflective condition. Leave concrete floors broom clean. Vacuum carpeted surfaces.

- d. Wipe surfaces of mechanical and electrical equipment. Remove excess lubrication and other substances. Clean plumbing fixtures to a sanitary condition. Clean light fixtures and lamps.
 - e. Clean the site of rubbish, litter and other foreign substances. Sweep paved areas broom clean; remove stains, spills and other foreign deposits. Rake grounds that are neither paved nor planted, to a smooth even-textured surface.
- B. Removal of Protection: Remove temporary protection and facilities installed for protection of the Work during construction.
- C. Compliance: Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on the Owner's property. Do not discharge volatile, harmful or dangerous materials into drainage systems. Remove waste materials from the site and dispose of in a lawful manner.
1. Where extra materials of value remaining after completion of associated Work have become the Owner's property, arrange for disposition of these materials as directed.

END OF SECTION

SECTION 02000
MOBILIZATION

PART 1 - GENERAL

1.01 WORK INCLUDED

This item includes initiation of contract and shall consist of preparatory work and operations necessary for the movement of personnel, equipment, supplies and incidentals to the Project Site, and other work performed prior to beginning construction operations.

1.02 RELATED WORK

A. Section 02100 - Site Preparation

1.3 REFERENCES

A. Occupational Safety and Health Administrative Standards (OSHA)

B. State Administrative Code

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION

3.1 The site of the project shall be cleared within the limits of construction. Clearing shall proceed only as necessary to facilitate construction.

3.2 The Contractor may set up a field office, onsite, at a location acceptable to the County of Union.

A. The onsite field office shall be maintained in good condition.

3.3 Onsite locations are to be selected for stockpiling construction materials, equipment and earthwork. Site selections shall be clear of continuing construction traffic and operations. Construction materials shall be stored to assure the preservation of their quality and fitness.

- 3.4 Onsite storage of flammable material, fuel and explosives will not be allowed without a proper permit and certified acceptance of the containment facility by local, county and state agencies. Such permits and certifications are to be obtained by the Contractor, at his expense. Copies of the permits and certifications are to be filed with the County of Union and the County Engineer.
- 3.5 The County Engineer shall be notified in writing at least 48 hours in advance, when any property control marker, whether monument, stone, concrete, wood or metal or a mark on a structure, designating the lines of the streets or highways or of private property, is in the line of any excavation or other construction work and may have to be disturbed or removed. All established property control which is destroyed or disturbed shall be replaced by a State Registered Land Surveyor at the Contractor's expense.

END OF SECTION

SECTION 02050
DEMOLITION

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Demolition and removal of pavements, curbs, drainage structures, utilities, signage, bollards, or landscaping.
- B. Filling voids in subgrade created as a result of removals or demolition.
- C. Hazardous material compliance.

1.2 RELATED SECTIONS

- A. Section 02100 - Site Preparation
- B. Construction drawings.

1.3 PROJECT RECORD DOCUMENTS

Accurately record actual locations of capped utilities, and subsurface obstructions.

1.4 REGULATORY REQUIREMENTS

- A. Conform to applicable local code for demolition of structures, safety of adjacent structures, dust control, and runoff control.
- B. Obtain required permits and licenses from appropriate authorities. Pay associated fees including disposal charges.
- C. Notify affected utility companies before starting work and comply with their requirements.
- D. Do not close or obstruct roadways, sidewalks, or fire hydrants without appropriate permits.
- E. Conform to applicable regulatory procedures when hazardous or contaminated materials are discovered.

1.5 JOB CONDITIONS

- A. Conditions existing at time of inspection for bidding purposes will be maintained by the County of Union in so far as practicable.
- B. Items of salvageable value to Sub-Contractor shall be removed from site. Storage or sale of removed items on site will not be permitted and shall not interfere with other work specified in Contract Documents.
- C. Explosives shall not be brought to site or used.

PART 2 PRODUCTS

2.01 FILL MATERIALS

Aggregate materials as specified.

3.1 PREPARATION

- A. Provide, erect, and maintain temporary barriers, and security devices at locations indicated.
- B. Protect existing landscaping, appurtenances, and adjacent structures which are not to be demolished. Repair damage caused by demolition operations at no cost to the County of Union.
- C. Prevent movement or settlement of adjacent equipment. Provide bracing and shoring.
- D. Mark location of utilities. Protect and maintain in safe and operable condition utilities that are to remain. Prevent interruption of existing utility service to occupied or used facilities, except when authorized in writing by authorities having jurisdiction. Provide temporary services during interruptions to existing utilities as acceptable to governing authorities.

3.2 DEMOLITION REQUIREMENTS

- A. Conduct demolition to minimize interference with adjacent structures or pavements.
- B. Cease operations immediately if adjacent structures appear to be in danger. Notify the authority having jurisdiction. Do not resume operations until directed.
- C. Conduct operations with minimum of interference to public or private access. Maintain ingress and egress at all times.
- D. Obtain written permission from adjacent property owners when demolition equipment will traverse, infringe upon, or limit access to their property.
- E. Sprinkle work with water to minimize dust. Provide hoses and water connections for this purpose.
- F. Comply with governing regulations pertaining to environmental protection.
- G. Clean adjacent structures and improvements of dust, dirt, and debris caused by demolition operations. Return adjacent areas to condition existing prior to start of work.

3.3 SELECTIVE DEMOLITION

- A. Proceed with demolition in a systematic manner.
- B. Demolish concrete and masonry in small sections.
- C. Demolish and remove below grade construction and concrete slabs on grade in their entirety.

3.4 FILLING BASEMENTS AND VOIDS

- A. Completely fill below grade areas and voids resulting from demolition or removal of concrete slabs using approved select fill materials consisting of stone, gravel, and sand free from debris, trash, frozen materials, roots, and other organic matter.
- B. Ensure that areas to be filled are free of standing water, frost, frozen or unsuitable material, trash, and debris prior to fill placement.

- C. Place fill materials in horizontal layers not exceeding 8" in loose depth and compact each layer at optimum moisture content of fill material to proposed density, unless subsequent excavation for new work is required.
- D. Grade surface to match adjacent grades and to provide flow of surface drainage after fill placement and compaction.

3.5 DISPOSAL OF DEMOLISHED MATERIALS

- A. Remove from site debris, rubbish, and other materials resulting from demolition operations.
- B. No burning of any material, debris, or trash on-site or off-site will be allowed.
- C. Transport materials removed from demolished structures with appropriate vehicles and dispose off-site to areas which are approved for disposal by governing authorities and appropriate property owners.

END OF SECTION

SECTION 02100
SITE PREPARATION

PART 1 GENERAL

1.1 WORK INCLUDED

- A. Clearing site and removing of debris, grass, trees and other plant life in preparation for site or building excavation work.
- B. Protection of existing equipment, trees or vegetation to remain.
- C. Stripping topsoil from areas that are to be incorporated into the limits of the project and where so indicated on the construction drawings.
- D. Removing designated paving, curbs, walkways, fencing, bollards etc.
- E. Removing abandoned utilities.

1.2 RELATED SECTIONS

- A. Section 02200 - Earthwork
- B. Construction Drawings

1.3 ENVIRONMENTAL REQUIREMENTS

- A. Construct temporary erosion control systems as directed to protect adjacent properties and water resources from erosion and sediment prior to disturbance.

PART 2 PRODUCTS

Not applicable.

PART 3 EXECUTION

3.1 PREPARATION

- A. Verify that existing plant life to remain identified in such a manner as to insure their protection throughout construction operations.
- B. Call local utilities and request that underground facilities be located and marked out within and surrounding construction areas at least 3 days, but not more than 10 days, prior to excavation operations.

- C. Utility owners, whose underground facilities directly affected by construction, are to be consulted to arrange for replacement and/or relocation.

3.2 PROTECTION

- A. Locate and identify existing utilities that are to remain and protect them from damage.
- B. Protect trees, plant growth and features designated to remain.
- C. Conduct operations with minimum interference to public or private accesses and facilities. Maintain access and egress at all times and clean or sweep adjoining public areas daily or as required by the governing authority.
At such times as deemed necessary by the County of Union, dust control shall be provided with sprinkling systems or equipment provided by the Contractor.
- D. Protect bench marks, property corners and all other survey monuments from damage or displacement. If a marker needs to be removed it shall be referenced by a licensed land surveyor and replaced, as necessary, by the same.
- E. Provide traffic control as required, in accordance with the U.S. Department of Transportation "Manual of Uniform Traffic Control Devices" and the requirements of the State's Department of Transportation.
- F. Restore any and all utilities structures, appurtenances and/or landscaping damaged by operations to original condition to the satisfactory the County of Union.

3.3 CLEARING

- A. Depressions caused by clearing and grubbing operations are to be filled to subgrade elevation to avoid water ponding. Suitable fill material shall be placed in horizontal layers not exceeding 8" loose depth, and thoroughly compacted per fill requirements of this section and in Section 02200 - Earthwork.

3.4 REMOVAL

- A. Removal includes digging out stumps main root ball and root system.
- B. Remove all construction debris from the site to a receiving dump site that is approved for handling such material according to state laws and regulations.

- C. Partially remove paving, curb, walkways and concrete surfaces. Neatly saw cut edges at right angles to the pavement surfaces.
- D. Remove abandoned utilities. Coordinate with utility owners. Indicate removal termination point for underground utilities.
- E. Continuously clean-up and remove waste materials from site. Do not allow materials to accumulate on site.
- F. Do not burn or bury materials on site. Leave site in clean condition.

3.5 TOPSOIL EXCAVATION

- A. Strip topsoil from areas that are to be filled, excavated, or re-graded to such a depth that it prevents intermingling with underlying subsoil or questionable material.
- B. Topsoil shall consist of organic surficial soil found in depth of not less than 6 inches. Suitable topsoil for stockpiling and respreading shall be reasonably free of subsoil, clay lumps, stones, weeds, roots, objects over 2" in diameter and other objectionable material.
Wet topsoil is to be considered as unsuitable material

and is to be removed from the site.

- C. Stockpile topsoil in storage piles in areas where directed. Construct storage piles to freely drain surface water. Cover storage piles as required to prevent windblown dust. Dispose of unsuitable topsoil for waste material, unless otherwise specified by owner. Excess topsoil shall be removed from the site by the Contractor unless specifically noted otherwise on the Drawings.

END OF SECTION

SECTION 02200
EARTHWORK

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. This section includes all labor, materials and equipment necessary to complete site grading, excavation and backfill work shown on the Drawings or as described herein.
- B. Excavation work includes the de-watering of all excavation sites; hauling and disposal of all unsuitable materials of excavation; the protection of pipelines and structures above or below grade, either existing or as part of proposed construction; cutting. Excavation also includes the filling and grading to required lines, dimensions, contours and proposed elevations for proposed improvements; proof-rolling of existing soil to remain; and the general maintenance and cleanup of the project site.
- C. The scarifying, compaction, drying and removal of unsuitable material to ensure proper preparation of areas for fills or proposed improvements.

1.2 RELATED SECTIONS

- A. Section 02050 - Site Demolition
- B. Section 02100 - Site Preparation
- C. Section 02222 - Excavation, Backfill and Compaction for Utilities
- D. Section 02227 - Aggregate Materials
- E. Section 02601 - Utility Test Pits
- F. Construction Drawings

1.3 REFERENCE STANDARDS

- A. American Society for Testing and Materials (ASTM) latest edition.
- D 422 Standard Test Method for Particle-Size Analysis of Soils
 - D 698 Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort [12,400 ft-lbf/ft (600 kN-m²)].
 - D 1556 Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method
 - D 1557 Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort [56,000 ft-lbf/ft (2,700 kN-m²)]

 - D 1559 Standard Test Method for Resistance to Plastic Flow of Bituminous Mixtures Using Marshall Apparatus.
 - D 2167 Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method.
 - D 2216 Standard Test Method for Laboratory Determination of Water (Moisture) Content of Soil and Rock
 - D 2487 Standard Classification of Soils for Engineering Purposes (Unified Soil Classification System)
 - D 2922 Standard Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
 - D 3017 Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth)
 - D 4318 Standard Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils
 - C 25 Standard Test Methods for Chemical Analysis of Limestone, Quicklime and Hydrate Lime
 - C 110 Standard Test Methods for Physical Testing of Quicklime, Hydrated Lime and Limestone
 - C 618 Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Portland Cement Concrete
 - C 977 Standard Specification for Quicklime and Hydrated Lime for Soil Stabilization

- B. American Association of State Highway and Transportation Officials (AASHTO), latest edition, T 88 - Mechanical Analysis of Soils
- C. Occupational Safety and Health Administration Standards (OSHA).

1.4 **ENVIRONMENTAL REQUIREMENTS**

Construct temporary erosion control systems as shown on the approved plans or as directed by the engineer to protect adjacent properties and water resources from erosion and sediment damage.

1.5 **QUALITY ASSURANCE**

- A. Independent Testing Laboratory selected and paid by the County of Union, may be retained to perform construction testing on site based on the following:
 - 1. Areas of Construction exclusive of building subgrade: In cut areas, not less than one compaction test for every 10,000 square feet. In fill areas, same rate of testing for each 8" lift (measured loose).
 - B. If compaction requirements are not complied with at any time during construction process, remove and re-compact deficient areas until proper compaction is obtained at no additional expense to the County of Union.
 - C. In all areas to receive pavement, a CBR (or LBR) test shall be performed for each type of material imported from off-site.
 - D. The following tests shall be performed on each type of on-site or imported soil material used as compacted fill as part of construction testing requirements.
 - 1. Moisture and Density Relationship: ASTM D 698 or ASTM D 1557.
 - 2. Mechanical Analysis: AASHTO T-88
 - 3. Plasticity Index: ASTM D 4318
 - E. Field density tests for in-place materials shall be performed according to one of the following standards as part of construction testing requirements.
 - 1. Sand-Cone Method: ASTM D 1556
 - 2. Balloon Method: ASTM D 2167

3. Nuclear Method: ASTM D 2922-9.5.2 - Direct Transmission Procedure)
- F. Independent Testing Laboratory shall prepare test reports that indicate test location, elevation data, and test results. The County of Union and Contractor shall be provided with copies of reports within 96 hours of time test was performed. In event that any test performed fails to meet these Specifications, the County of Union and Contractor shall be notified immediately by independent testing laboratory.
- G. All costs related to re-testing due to failures shall be paid for by the Contractor at no additional expense to the County of Union. The County of Union reserves the right to employ an Independent Testing Laboratory and to direct any testing that is deemed necessary. Contractor shall provide free access to site for testing activities.

1.6 SUBMITTALS

- A. Submit a sample of each type of off-site fill materials that is to be used at the site in an air tight, 10 lb. container for the testing laboratory or submit a gradation and certification of the fill material that is to be used to the testing laboratory for review.
- B. Submit the name of each material supplier and specific type and source of each material. Any change in source throughout the job requires approval of the County of Union.
- C. For use of fabrics or geo-grids, a design for approval by the County of Union shall be submitted.
- D. Excavation Safety and Protection Plan: Describe sheeting, shoring and bracing materials and installation required to protect excavations and adjacent structures and property; include structural calculations confirming the integrity of trench support systems and excavation bracing. Structural calculations are to be performed, signed and sealed by a registered professional engineer.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Excavated and re-used on-site material for subsoil fill as specified herein. (See Subsection 3.02 - Excavation

for Filling and Grading)

- B. Aggregate fill as specified in Section 02227.
- C. Imported sub-soil material approved by the County of Union and specified herein. (See Subsection 1.05 - Quality Assurance)
- D. Topsoil fill as specified in Section 02090.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Identify required lines, levels, contours and datum.
- B. Locate and identify existing utilities that are to remain and protect them from damage.
- C. Notify utility companies to remove and/or relocate any utilities that are in conflict with the proposed improvements.
- D. Protect plant life, lawns, fences, existing structures, sidewalks, paving and curbs, located either on site which are to remain or on adjoining property, from excavating equipment and vehicular traffic.
- E. Protect benchmarks, property corners and all other survey monuments from damage or displacement. If a marker needs to be removed it shall be referenced by a licensed land surveyor and replaced, as necessary, by the same.
- F. Remove from site material encountered in grading operations that, in opinion of the County of Union, is unsuitable or undesirable for back-filling, sub-grade or foundation purposes. Dispose in a manner as described under Subsection 3.8 - Disposal of Unwanted Materials of this Specification Section. Backfill areas with layers of suitable material and compact as specified.
- G. Where permitted by the State DEP, prior to placing fill in low areas, such as isolated streams, manmade ditches or small isolated ponded wet areas, perform the following procedures:
 - 1. Drain water out by gravity with ditch having flow line lower than lowest elevation in low area. If drainage cannot be performed by gravity ditch, use

adequate pumping means to obtain same results.

2. After drainage of low area is complete, remove mulch, mud, debris, and other unsuitable material by using acceptable equipment and methods that will keep natural soils underlying low areas dry and undisturbed.
3. If proposed for fill, all muck, mud, and other materials removed from the above described low areas shall be dried on-site by spreading in thin layers for observation by the County of Union, owner or owner's representative. Material shall be inspected and, if found to be suitable for use as fill material, shall be incorporated into lowest elevation of site filling operation, but not under building areas or within 10'-0" of perimeter of building pads or paving sub-grade. If, after observation by the County of Union, all unsuitable material shall be removed from site.

3.2 REMOVAL OF WATER, PROTECTION FROM FLOODING, AND DEWATERING

- A. The Contractor shall convey all water removed from excavations and rain water to the storm drainage system. Plans for such a system shall be submitted by the Contractor for review and approval prior to construction.
- B. Precautions shall be taken to protect uncompleted work from flooding during storms or from other causes. Any pipeline or structure not stable against uplift during construction or prior to completion shall be thoroughly braced or otherwise protected.
- C. Dewatering
 1. The Contractor's pumping and dewatering operations shall be carried out in such a manner as to prevent damage to existing structures and utilities and the contract work, and so that no loss of ground will result from these operations. Pumping shall be continuous where directed by the County Engineer to protect the work and/or to maintain a satisfactory progress.
 2. After individual structures or pipelines have been installed, in the event of high ground water or flooding conditions, care must be taken to counteract uplift forces and prevent flotation of

structures. Continuous dewatering (7 days per week, 24 hours per day) shall be conducted as necessary. Also, standby, independent power and pumping equipment shall be provided for reliability. The Contractor's dewatering system shall have screens of adequate size to prevent removal of fines during the dewatering operation. Prior to the installation of the dewatering system, details of the system shall be submitted to the County Engineer for review. It should be noted that it is the Contractor's responsibility to provide and operate an adequate dewatering system until excavations are backfilled to finished grades or pressure relief valves are installed.

3. The Contractor shall provide adequate noise inhibitors on all dewatering equipment, as approved by the County Engineer. This shall include mufflers, enclosures, or other items needed to keep the noise within levels required by OSHA and local ordinances. If, in the opinion of the County Engineer, the appropriate noise level has been exceeded, the Contractor shall be required to use electrically powered dewatering equipment at no additional cost to the County of Union.
4. Any damage resulting from the failure of the dewatering operations and any damage resulting from the failure of maintaining the areas in a suitable dry condition shall be repaired by the Contractor as directed by the County Engineer at no additional cost to the County of Union.
5. At no time will the Contractor be permitted to dispose of dewatering effluent or surface drainage in any treatment process.
6. The Contractor shall meter all dewatering effluent if a temporary groundwater diversion permit is required by NJDEP. The Contractor shall comply with all NJDEP regulations regarding groundwater diversion.
7. If the trench water to be pumped out is more acidic than ambient stream levels, the Contractor shall take appropriate measures to adjust the pH of the dewatering effluent to that of the surrounding stream.

D. Sediment Control:

1. Sediment shall be settled or filtered out of all surface or subsurface water encountered during construction before such water enters the storm drainage system. Sediment control shall be in strict accordance with "Soil Erosion and Sediment Control" of these specifications.
 2. The Contractor shall provide all necessary measures such as construction of sediment control fence, water diversion structures, ditches, sediment basins, etc., to prevent silt laden water from dewatering activities from directly entering streams and wetlands.
- E. The Contractor shall keep the construction site drained at all times. No fill shall be placed in wet areas. The Contractor shall provide sufficient ditches, sumps, drains, well points or deep wells as required to depress the groundwater level in advance of excavations and to maintain the site in a dry condition. Excavation dewatering shall be installed to depress and maintain the groundwater level at least two (2') feet below the bottom of the excavation at all times.
- F. Pipe shall be laid on a solid, dry foundation. Any structural pipe laid in water or wet trenches will be removed and reinstalled at the Contractor's expense.

3.3 EXCAVATION FOR FILLING AND GRADING

- A. Classification of Excavation: The Contractor is advised to investigate and examine the site to determine type, quantity, quality, and character of excavation work to be performed. Excavation shall be considered unclassified and shall include the removal of sub-grade materials of every type and nature, including all boulders, rock, small underground structures and other such materials requiring drilling and blasting, wedging, sledging or jackhammering for their removal. Approval from the County of Union shall be obtained before any blasting is undertaken.
- B. Perform excavation using capable, well maintained equipment and methods acceptable to the County of Union and governing agencies. At the project site, the Contractor shall excavate all existing materials to the lines, grades and slopes shown on the Contract Drawings. Excavation to firm material beyond lines and

grades shown on plans may be required. Contractor shall backfill to required grade with suitable excavated on-site material to the maximum extent possible, using standard acceptable methods and/or as specified herein or as directed by the Engineer. Excavated materials, approved by the County Engineer, shall be stockpiled for subsequent use for filling and backfilling. Only if on-site material proves unsuitable or of insufficient quantity shall off-site material be used as general fill. Unsuitable excavated materials, including clay, silt, organic soils, decomposed shale, man-made fills and others as may be designated by the County Engineer shall be removed and disposed of off-site at approved licensed disposal sites.

- C. Grade top perimeter of excavation to prevent surface runoff water from draining into excavation. When performing grading operations during periods of wet weather, provide adequate drainage and ground water management to control moisture of soils.
- D. Shore, brace, and drain excavations as necessary to maintain safe, secure, and free of water at all times. Excavation within a bracing system, if required, shall be performed in stages and the Contractor shall not excavate below any prescribed slope or elevation until the proper braces have been installed and wedged. If, during progress of excavation, ground movement or movement of adjacent structure is discovered, excavation shall immediately stop and measures, approved by the County Engineer, taken to prevent further movement.
- E. If any over-excavation is caused by the Contractor's error, the Contractor shall, at its own expense, refill all such excavated space with such material and in such a manner as may be directed by the County Engineer in order to insure the stability of the various structures.
- F. All excavations shall be protected from freezing weather. The Contractor shall assume full responsibility for protection of the work.
- G. Excavations shall be performed in dry conditions and slopes shall be cut back to the necessary stable slope configuration to comply with Federal, State and local requirements. Any excavations which cannot be cut back to a stable slope configuration shall be braced with proper sheet piling, uprights, and stringers in conformance with OSHA safety regulations.

- H. Excavated material containing rock or stone greater than 6" in largest dimension is unsuitable as fill within proposed building and paving areas.
- I. Rock or stone greater than 2" but less than 6" in largest dimension is acceptable as fill to within 24" below subgrade level when mixed with suitable material.
- J. Rock or stone less than 2" in largest dimension and mixed with suitable material is acceptable as fill within the upper 24" of proposed sub-grade level.
- K. Repair or replace items, indicated to remain, damaged by excavation and filling operations.

3.4 FILLING AND SUBGRADE PREPARATION

- A. Fill areas to contours and elevations shown with unfrozen materials.
- B. Place fill in continuous lifts specified herein.

<u>U.S. Sieve Size</u>	<u>Percent Passing</u>
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3.5 PLACEMENT OF BACKFILL AND COMPACTION

- A. Compacted to 95% AASHTO density.
- B. Placement of Fill: No backfill shall be placed until the excavation, subgrade, and backfill material to be used are approved by the Engineer. All backfill shall be placed in uniform horizontal layers not more than 12" in thickness, unless approved by County Engineer.

Test for Density of Soil in Place by the Nuclear Methods, ASTM Designations D-2922 and D-3017 or the Sand/Cone Method, ASTM Designation D-1556.

- C. Where compacted fill is placed adjacent to walls, the difference in elevation of the top of the fill on either side of the wall can be no more than one foot unless the wall is adequately braced or designed.
- D. A compactor shall be used over granular soils. The compactor shall be a vibratory roller capable of operating at the optimum frequency for the equipment provided. A sheepsfoot roller shall be used over cohesive soils as determined by the County Engineer.

- E. Compaction requirements will be strictly enforced.
- F. Completion of the backfill and compaction effort described in these specifications.
- G. Final Approval: The County Engineer shall inspect the prepared areas immediately before the Contractor places foundations or piping on compacted fills or virgin soil. The Contractor shall remove any soft fill and replace with properly compacted material as directed by the County Engineer.
- H. The Contractor shall protect all newly graded areas from traffic and erosion. It shall keep all graded areas free of trash and debris. Where completed compacted areas are disturbed by subsequent construction operation or adverse weather, the Contractor shall scarify all surfaces, reshape, and compact to the required density prior to further construction.

2.2 MAINTENANCE OF SUBGRADE

- A. Adjacent to and beneath foundation from freezing.

2.3 DISPOSAL OF UNWANTED MATERIALS

Where permitted by Municipal Regulations, unwanted material generated from clearing site and excavation operations is to be removed, offsite, and disposed of at approved licensed disposal receiving facilities in accordance with the provisions listed below.

- A. All material such as brush, logs, stumps, concrete pavement, unusable excavated material, etc., shall be trucked from the Project Site and dumped at approved licensed disposal areas. The Contractor shall, at its own expense, comply with all local, State and Federal laws and regulations governing the use of the Project Site, including types and quantities of material removed.
- B. Hauling and dumping costs and the costs of disposal areas shall be included in the lump sum price bid in the proposal. The use of coverings on trucks hauling materials may be required by local ordinances in various municipalities; no additional claims shall be made by the Contractor due to such requirements. Truck wheels shall be cleaned prior to leaving the Project Site so that no mud or other unsightly material is left on public roads.

No additional payment will be made for the disposal of excess excavated material off-site.

- C. Burning will not be permitted.

END OF SECTION

SECTION 02222
EXCAVATION, BACKFILL AND
COMPACTION

PART 1 GENERAL

WORK INCLUDED

Not used

RELATED SECTIONS

REFERENCE STANDARDS

QUALITY ASSURANCE

PROJECT RECORD DOCUMENTS

PART 2 PRODUCTS

2.01 MATERIALS

U. S. Sieve Size #67	Percent Passing
U. S. Sieve Size #57	Percent Passing (by

PART 3 EXECUTION

3.1 PREPARATION

3.2 EXCAVATION

- A. The local utility companies shall be contacted before excavation shall begin. Dig trench at proper width and depth for laying pipe, conduit, or cable. Cut trench banks practically and remove stones as necessary to avoid point-bearing. Over excavate wet or unstable soil, if encountered, from trench bottom as necessary to provide suitable base for continuous and uniform bedding.

- B. All trench excavation side walls greater than 5 feet in depth shall be sloped, shored, sheeted, braced or otherwise supported by means of the sufficient strength to protect the workmen within them in accordance with the applicable rules and regulations established for construction by the Department of Labor, Occupational Safety and Health Administration (OSHA), and by local ordinances. Lateral travel distance to an exit ladder or steps shall not be greater than 25 feet in trenches 4 feet or deeper.
- C. Perform excavation as indicated for specified depths. Stockpile suitable back-fill material in an orderly manner far enough from bank of trench to avoid overloading, slides, or cave-ins.
- D. Remove excavated materials not required or not suitable for backfill or embankments and waste as specified. Any structures discovered during excavation(s) shall be disposed of as specified.
- E. Prevent surface water from flowing into trenches or other excavations by temporary grading or other methods, as required. Remove accumulated water in trenches or other excavations by pumping or other acceptable methods.
- F. Open cut excavation by hand. Dispose of unsuitable material and provide other suitable material at no additional cost to the Owner.
- G. Provide sheeting and bracing, when necessary, in trenches and other excavations where protection of workmen required. Sheeting may be removed after sufficient backfilling to protect against damaging or injurious caving.

3.3 PIPE BEDDING

- A. Accurately cut trenches for conduit and/or pipes to be installed to designated elevations and grades 6" below bottom of pipe and to width as specified. Place 6" of bedding material, compact in bottom of trench, and accurately shape to conform to lower portion of pipe barrel. After pipe installation, place select backfill and compact in maximum 6" layers measured loose to the top of the layer. Conform to details shown in the plans.
- B. Where utilities are to be placed on fill, the fill is to be compacted to 95% modified proctor density per ASTM D1557, in 8" loose lifts.

3.4 BACKFILLING

- A. Criteria: Trenches shall not be back-filled until required tests are performed and the utility systems comply with and are accepted by applicable governing authorities. Back-fill trenches as specified. If improperly back-filled, reopen to depth required to obtain proper compaction. Back-fill and compact, as specified, to properly correct condition in an acceptable manner.
- B. Back-filling: After pipe or conduit has been installed, bedded, and tested as specified, back-fill trench or structure excavation with specified material placed in 8" maximum loose lifts.
- C. Back-fill trenches to the contours and elevations shown on the plans with unfrozen materials.
- D. Systematically back-fill to allow maximum time for natural settlement. Do not back-fill over porous, wet, frozen or spongy sub-grade surfaces.

3.5 COMPACTION

- A. Exercise proper caution when compacting immediately over top conduits. Water jetting or flooding is not permitted as method of compaction.
- B. Maintain optimum moisture content of fill materials to attain required compaction density.
- C. An independent testing laboratory may perform test at engineer's to-be-designated intervals of trench for the first and every other eight-inch (8") lift of compacted trench backfill and furnish copies of test results as specified. Compact to minimum density of 95% of optimum density in accordance with ASTM D 1557.
- D. All materials used for backfill shall be tested in accordance with Section 02200.

END OF SECTION

SECTION 02223
EXCAVATION, BACKFILLING AND COMPACTING FOR PAVEMENT

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Excavate to line, grade and configuration as shown in the plans and specifications for proposed pavements.
- B. Fill to line, grade and configuration as shown in the plans and specifications for proposed pavements.
- C. Compacting fill materials in an acceptable manner as stated herein.

1.2 RELATED SECTIONS

- A. Section 02200 - Earthwork
- B. Section 02227 - Aggregate Materials
- C. Section 02500 - Soil and Aggregate Base Course
- D. Section 02510 - Bituminous Concrete Base and Surface Courses
- E. Section 02525 - Curbs and Sidewalks
- F. Section 02601 - Utility Test Pits
- G. Construction Drawings

1.3 REFERENCE STANDARDS

- A. American Society for Testing and Materials (ASTM) latest edition.
 - D 422 Standard Test Method for Particle-Size Analysis of Soils
 - D 698 Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort [12,400 ft-lbf/ft² (600 kN-m²)].
 - D 1556 Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method

- D 1557 Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort [56,000 ft-lbf/ft² (2,700 kNm²)]
 - D 1559 Standard Test Method for Resistance to Plastic Flow of Bituminous Mixtures Using Marshall Apparatus.
 - D 2167 Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method.
 - D 2216 Standard Test Method for Laboratory Determination of Water (Moisture) Content of Soil and Rock
 - D 2487 Standard Classification of Soils for Engineering Purposes (Unified Soil Classification System)
 - D 2922 Standard Test Methods for Density of Soil and Soil- Aggregate in Place by Nuclear Methods (Shallow Depth)
 - D 3017 Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth)
 - D 4318 Standard Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils
 - C 25 Standard Test Methods for Chemical Analysis of Limestone, Quicklime and Hydrate Lime
 - C 110 Standard Test Methods for Physical Testing of Quicklime, Hydrated Lime and Limestone
 - C 618 Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Portland Cement Concrete
 - C 977 Standard Specification for Quicklime and Hydrated Lime for Soil Stabilization
- B. American Association of State Highway and Transportation Officials (AASHTO), latest edition, T 88 - Mechanical Analysis of Soils
- C. Occupational Safety and Health Administration Standards (OSHA).

1.4 **QUALITY ASSURANCE**

Independent testing laboratory selected and paid by the County of Union shall be retained to perform construction testing on filling operations and sub-grade analysis as specified in

Section 02200 - Earthwork and as stated herein.

1.5 SUBMITTALS

- A. Shop drawings or details pertaining to excavating and filling for pavement are not required unless otherwise shown on the drawings or specifications or if contrary procedures to the project documents are proposed.
- B. Submit a sample of each type of off-site fill material that is to be used in backfilling in an air-tight, 10 lb. container for the testing laboratory or submit a gradation and certification of the aggregate material that is to be used to the testing laboratory for review.
- C. Submit the name of each material supplier and specific type and source of each material. Any change in source throughout the job requires approval by the County of Union.
- D. Excavation Safety and Protection Plan: Describe sheeting, shoring and bracing materials and installation required to protect excavations and adjacent structures and property; include structural calculations confirming the integrity of trench support systems and excavation bracing. Structural calculations are to be performed, signed and sealed by a registered professional engineer.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Fill material from on-site as specified in Section 02200-Earthwork and approved by the County of Union.
- B. Fill material from off-site as specified in Section 02200 - Earthwork and approved by the County of Union.
- C. Aggregate material as specified in Section 02227 - Aggregate Materials.
- D. Acceptable stabilization fabrics and geo-grids:
 - 1. Mirafi 500X or 600X
 - 2. Phillips 66 Supac 6WS
 - 3. Dupont Typar 3401 and 3601
 - 4. Trevira S1114 and S1120
 - 5. Tensar SS-1 and SS-2
 - 6. AMXCO's Curlex Blankets

7. Exxon GTF-200 or 350

PART 3 - EXECUTION

3.1 PREPARATION

- A. Identify all lines, elevations and grades necessary to construct pavements, curb and gutter, bases, walkways and roadways as shown in the plans and specifications.
- B. Carefully protect benchmarks, property corners, monuments or other reference points.
- C. Locate and identify all site utilities that have previously been installed for this project and may be in danger of damage by grading operations.
- D. Locate and identify all existing utilities that are to remain and protect them from damage.
- E. Over excavate and properly prepare areas of sub-grade that are not capable of supporting the proposed systems. These areas are to be stabilized by using acceptable backfill materials placed and compacted as specified, filter fabrics and/or aggregate material.

3.2 EXCAVATION

- A. Excavate roadway and pavement areas to line and grade as shown in the plans and specifications.
- B. Engage all suitable material into the project fill areas as specified in Section 02200 - Earthwork.
- C. Unsuitable excavated material is to be disposed of in a manner and location that is acceptable to the County of Union and local governing agencies and as specified under Section 02200 - Earthwork.
- D. Perform excavation using capable, well maintained equipment and methods acceptable to the owner and the project document requirements.

3.3 FILLING AND SUBGRADE PREPARATION

- A. Areas exposed by excavation or stripping and on which sub-grade preparations are to be performed shall be scarified to an average depth of 10"-11" based on the soil borings and compacted to minimum of 95% of optimum density, in accordance with ASTM D 1557 , at a moisture

content of not less than 1% below and not more than 3% above the optimum moisture content, unless otherwise directed by the County of Union. These areas shall then be proof-rolled to detect any areas of insufficient compaction. Proof-rolling shall be accomplished by making a minimum of two (2) complete passes with a fullyloaded tandem-axle dump truck, or approved equivalent, in each of the two perpendicular directions under the supervision and direction of a field geotechnical engineer. Areas of failure shall be excavated and recompacted as stated above.

- B. Fill materials used in preparation of sub-grade shall be placed in lifts or layers not to exceed 8" loose measure and compacted to a minimum of 95% of optimum density, in accordance with ASTM D 1557. Moisture content shall not be less than 1% below and not more than 3% above the optimum moisture content, unless otherwise directed by the County of Union.
- C. The following table stipulates maximum allowable values for plasticity index (PI) and liquid limit (LL) of suitable fill materials to be used in the specified areas, unless specifically stated otherwise on the Drawings:

	<u>PI</u>	<u>LL</u>
* Paving Area Below Upper Two Feet	20	50
* Paving Area Above Upper Two Feet	15	40
(*References to Depth are to Proposed Sub-grade Elevations)		

3.4 COMPACTION

- A. Maintain optimum moisture content of fill materials to attain required compaction density.
- B. All materials shall be tested in accordance with Section 02200 - Earthwork.
- C. An independent testing laboratory selected and paid by the County of Union, shall be retained to perform testing on-site.
- D. Compaction test will be as specified in Section 02200 - Earthwork together with the following for paving areas:
 - 1. In cut areas not less than one compaction test for every 10,000 square feet.

2. In fill areas, same rate of testing for each 8" lift (measured loose).
- E. If compaction requirements are not complied with at any time during construction process, remove and recompact deficient areas until proper compaction is obtained at no additional expense to the County of Union.

3.5 MAINTENANCE OF SUBGRADE

- A. Finished sub-grades shall be verified to ensure proper elevation and conditions for construction above subgrade.
- B. Protect sub-grade from excessive wheel loading during construction including concrete trucks and dump trucks.
- C. Remove areas of finished sub-grade found to have insufficient compaction density to depth necessary and replace in a manner that will comply with compaction requirements by use of material equal to or better than best sub-grade material on-site. Surface of sub-grade after compaction shall be hard, uniform, smooth, stable, and true to grade and cross-section.

3.6 FINISH GRADING

- A. Finish grading shall be in accordance with Section 02200 - Earthwork and as more specifically stated herein.
- B. Grading of paving areas shall be checked by string line from grade stakes (blue tops) set at not more than 50' centers. Tolerances of 0.10 feet, more or less, will be permitted. Sub-Contractor to provide engineering and field staking necessary for verification of lines, grades, and elevations.

END OF SECTION

AGGREGATE MATERIAL
SECTION 02227

PART 1 - GENERAL

1.1 WORK INCLUDED

Aggregate Materials requirements for use when called for in other specification sections.

1.2 RELATED SECTIONS

- A. Section 02100 - Site Preparation
- B. Section 02200 - Earthwork
- C. Section 02223 - Excavation, Backfill and Compaction for Pavement
- D. Section 02510 - Bituminous Concrete Base and Surface Courses
- E. Construction Drawings

1.3 REFERENCE STANDARDS

- A. American Society for Testing and Materials (ASTM) latest edition.
- C 136 Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates
- D 698 Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort [12,400 ft-lbf/ft² (600 kN-m²)].
- D 1557 Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort [56,000 ft-lbf/ft² (2,700 kN m²)]
- D 2167 Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method.
- D 2487 Standard Classification of Soils for Engineering Purposes (Unified Soil Classification System)
- D 2922 Standard Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
- D 3017 Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth)

- D 4318 Standard Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils
- B. American Association of State Highway and Transportation Officials (AASHTO), latest edition. T180 Moisture-Density Relations of soils Using a 10-lb (4.54 Kg) Rammer and an 18-inch (457 mm) Drop
M147 Materials for Aggregate and Soil-Aggregate
- C. Occupational Safety and Health Administration Standards (OSHA).

1.4 QUALITY ASSURANCE

Tests and analysis of aggregate material will be performed in accordance with standard ASTM and AASHTO procedures listed herein.

1.5 SUBMITTALS

- A. Submit in air-tight containers a 10 pound sample of each aggregate or mixture that is to be incorporated into the project to the testing laboratory designated by the County of Union. The results of testing are to be in the form of a report as stipulated in Section 02200, subsection 1.6 (F) of the Earthwork Specifications.
- B. Submit the name of each material supplier and specific type and source of each material. Any change in source throughout the job requires approval from the County Engineer.
- C. Submit materials certificate to on-site independent testing laboratory which is signed by material producer and Contractor, certifying that materials comply with, or exceed, the requirements herein.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. All construction and materials shall meet or exceed the requirements of this section and any state highway department specification section referred to or noted on the drawings which pertain to paving base course design, materials, preparation, and/or execution. All materials shall be as indicated on Drawings and shall comply with applicable state highway specification regarding source, quality, gradation, liquid limit, plasticity index, and

mix proportioning.

- B. Stone Aggregate Type I-5 conforming to the gradation requirements specified in the Standard Specifications for Road and Bridge Construction.
- C. Bedding stone shall be quarried and crushed angular limestone in accordance with the specification section.

Pipe Bedding Material: Course Aggregate, size #67 (choked) complying with the following gradation requirements:

<u>U. S. Sieve Size #67</u>	<u>Percent Passing (by weight)</u>
1 Inch	100
3/4 Inch	90-100
3/8 Inch	20-55
No. 4	0-10
No. 8	0-5

Underdrain Bedding Material: Course aggregate or washed gravel complying with the following gradation requirements:

<u>U. S. Sieve Size #57</u>	<u>Percent Passing (by weight)</u>
1-1/2 Inch	100
1 Inch	90-100
1/2 Inch	20-60
No. 4	0-10
No. 8	0-5

- D. Filter fabric and bedding stone shall be installed prior to the placement of the stones if so indicated on the drawings. Filter/Drainage fabric shall be as specified herein and as detailed on the plans, such as:

1. Mirafi 140 NS
2. Phillips 66 Supac 4NP
3. Dupont Typar 3341

PART 3 - EXECUTION

3.1 STOCKPILING

Stockpile on-site at locations indicated by County Engineer in such a manner that there will be no standing water or mixing with other materials.

3.2 BORROW SITES

Upon completion of borrow operations, clean up borrow areas as indicated on the plans and in a neat and reasonable manner to the satisfaction of the County Engineer.

3.3 TRANSPORTATION

Off-site materials shall be transported to the project using well maintained and operating vehicles. Once on the job site, all transporting vehicles shall stay on designated haul roads and shall at no time endanger any of the improvements by rutting, overloading or pumping the haul road.

END OF SECTION

SECTION 02500
SOIL AND AGGREGATE BASE COURSE

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Granular Base
- B. Full Depth Asphalt Base

1.2 RELATED SECTIONS

- A. Section 02100 - Site Preparation
- B. Section 02200 - Earthwork
- C. Section 02227 - Aggregate Materials
- D. Section 02510 - Bituminous Concrete Base Course and Surface Course
- E. Section 02525 - Curbs and Sidewalks
- F. Section 02601 - Utility Test Pits
- G. Construction Drawings

1.3 REFERENCES

- A. American Society for Testing and Materials (ASTM) latest edition.
 - D 698 Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort [12,400 ft-lbf/ft² (600 kN-m²)].
 - D 1556 Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method
 - D 1557 Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort [56,000 ft-lbf/ft² (2,700 kNm²)]
 - D 2167 Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method.
 - D 2216 Standard Test Method for Laboratory Determination of Water (Moisture) Content of Soil and Rock
 - D 2922 Standard Test Methods for Density of Soil and Soil- Aggregate in Place by Nuclear Methods (Shallow Depth)
 - D 3017 Standard Test Method for Water Content of Soil

and Rock in Place by Nuclear
Methods (Shallow Depth)
D 4318 Standard Test Method for Liquid Limit, Plastic
Limit, and Plasticity Index of Soils

- B. American Association of State Highway and Transportation Officials (AASHTO), latest edition, T 88 - Mechanical Analysis of Soils
- C. Standard Specifications for Road and Bridge construction
- D. Occupational Safety and Health Administration Standards (OSHA).

PART 2 - PRODUCTS

2.1 MATERIALS AND SUBMITTALS

- A. Submit materials certificate to on-site independent testing laboratory which is signed by material producer and Contractor, certifying that materials comply with, or exceed, the requirements herein.
- B. Stone Aggregate Type 19M64 for pavement base course shall conform to the gradation requirements specified.

PART 3 - EXECUTION

3.1 EXAMINATION

Sub-Contractor shall verify sub-grade has been inspected, is dry and properly prepared, and gradients and elevations are correct.

3.2 CONSTRUCTION

- A. Perform base course construction in a manner that will drain surface properly at all times and at the same time prevent runoff from adjacent areas from draining onto base course construction. The sub-grade shall be shaped and compacted to within a tolerance of plus or minus ½" of grade and contour, with no areas consistently high and shall be free from water pockets.
- B. Compact base material to not less than 95% of optimum density as determined by ASTM D 1557, unless otherwise indicated on the Drawings.
- C. Granular Base: Construct to thickness indicated on Drawings. Apply in lifts or layers not exceeding 8",

measured loose.

3.3 **FIELD QUALITY CONTROL**

- A. An Independent Testing Laboratory, selected and paid by Owner, shall be retained to perform construction testing of in-place base courses for compliance with requirements for thickness and tolerance. Paving base course tolerances shall be verified (by rod and level readings on no more than fifty-foot centers) to +0.05' of design elevation that will allow for paving thickness as shown in the Drawings. Sub-Contractor shall provide instruments and a suitable benchmark.

- B. The following tests shall be performed on each type of material used as base course material:
 - 1. Moisture and Density Relationship: ASTM D 698 or ASTM D 1557.
 - 2. Mechanical Analysis: AASHTO T-88.
 - 3. Plasticity Index: ASTM D-4318.
 - 4. Base material thickness: Perform one test for each 20,000 square feet in-place base material area.
 - 5. Base material compaction: Perform one test in each lift for each 20,000 square feet in-place base material area.
 - 6. Test each source of base material for compliance with applicable state highway specifications.

- C. Field density tests for in-place materials shall be performed according to one of the following standards as part of construction testing requirements:
 - 1. Sand-Cone Method: ASTM D 1556.
 - 2. Balloon Method: ASTM D 2167.
 - 3. Nuclear Method: ASTM D 2922, Method B (Direct Transmission).

- D. Independent Testing Laboratory shall prepare test reports that indicate test location, elevation data, and test results. County Engineer and Contractor shall be provided with copies of reports within 96 hours of time test was performed. In event that any test performed fails to meet these specifications, County Engineer and Contractor shall be notified immediately by Independent Testing Laboratory. Contractor shall provide free access

to site for testing activities.

END OF SECTION

SECTION 02510
BITUMINOUS CONCRETE BASE AND SURFACE COURSES

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Asphaltic concrete paving; surface course, binder course and base course.

1.2 RELATED SECTIONS

- A. Section 02223 - Excavation, Backfill and Compacting for Pavement
- B. Section 02227 - Aggregate Materials
- C. Section 02500 - Soil and Aggregate Base Course
- D. Section 02525 - Curbs and Sidewalks
- E. Construction Drawings

1.3 SUBMITTALS

- A. Design Mix: Before any asphaltic concrete paving is constructed, submit design mix for review and approval. Design mix submittal shall follow the format as indicated in the State specifications. The design shall be for mixtures indicated on the drawings.
- B. Material Certificates: Submit materials certificate, which is signed by material producer and Sub-Contractor, certifying that materials comply with, or exceed, the requirements herein.

1.4 JOB CONDITIONS

- A. Weather Limitations:
 - 1. Apply tack coat when ambient temperature is above 40°F, and when temperature has been above 35°F for 12 hours immediately prior to application. Do not apply when base is wet, contains excess moisture, or during rain.
 - 2. Construct asphaltic concrete paving when atmospheric temperature is above 40°F.

1.5 REFERENCES

- A. MS-2-Mix design methods for asphalt concrete and other hot mix types - The Asphalt Institute (AI)
- B. MS-3-Asphalt Plant Manual - The Asphalt Institute (AI)
- C. Hot Mix Asphalt Paving Handbook - US Army Corp of Engineers, UN-13 (CE MP-ET)
- D. MS-19-Basic Asphalt Emulsion Manual - The Asphaltic Institute (AI)
- E. ASTM D946 - Penetration - Graded Asphalt Cement for use in Pavement Construction
- F. Applicable State specifications

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Provide asphalt-aggregate mixture as recommended by local or state paving authorities to suit project conditions. Use locally available materials and gradations, which meet state highway specifications and exhibit satisfactory record on previous installations.
- B. Prime Coat: Cut-back asphalt type, ASTM D 2027; MC-30, MC-70, MC-250.
- C. Tack Coat: Emulsified asphalt; ASTM D 977.
- D. Herbicide Treatment: Commercial chemical for weed control, registered by Environmental Protection Agency. Provide granular, liquid or wettable powder form.
 - 1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated in the work include, but are not limited to, the following:
 - a. Ciba-Geigy Corp.
 - b. Dow Chemical U.S.A.
 - c. E.I. DuPont de Nemours & Co., Inc.
- E. Bituminous Concrete Base Course, Stone Mix 19M64 conforming to Composition Mixture.

- F. Bituminous Concrete Surface Course, Stone Mix 9.5M64 conforming to Composition Mixture.

2.2 EQUIPMENT

Maintain equipment in satisfactory operating condition and correct breakdowns in a manner that will not delay or be detrimental to progress of paving operations.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Remove loose material from compacted base material surface immediately before applying prime coat.
- B. Proof roll prepared base material surface to check for areas requiring additional compaction and areas requiring removal and recompaction.
- C. Do not begin paving work until sufficient base material areas have been prepared and are ready to receive paving.

3.2 APPLICATIONS

- A. Tack Coat:
 - 1. Apply to contact surfaces of previously constructed asphaltic concrete base courses or portland cement concrete and surfaces abutting or projecting into asphalt concrete and surfaces abutting or projecting into asphalt concrete pavement.
 - 2. Apply tack coat to asphaltic concrete base course or sand asphalt base course. Apply emulsified asphalt tack coat between each lift or layer of full depth asphaltic concrete and sand asphalt bases and on surface of all such bases where asphaltic concrete paving will be constructed.
 - 3. Apply emulsified asphalt tack coat in accordance with APWA Section 2204 and applicable state highway specifications.
 - 4. Apply at minimum rate of 0.05 gallon per square yard of surface.
 - 5. Allow to dry until at proper condition to receive paving.

3.3 ASPHALTIC CONCRETE PLACEMENT

- A. Place asphalt concrete mixture on completed compacted subgrade surface, spread, and strike off. Spread mixture at following minimum temperatures:
 - 1. When ambient temperature is between 40° F and 50° F: 285° F.
 - 2. When ambient temperature is between 50° F and 60° F: 280° F.
 - 3. When ambient temperature is higher than 60° F: 275° F.
- B. Whenever possible, all pavement shall be spread by a finishing machine. Inaccessible or irregular areas, pavement may be placed by hand methods. The hot mixture shall be spread uniformly to the required depth with hot shovels and rakes. After spreading, the hot mixture shall be carefully smoothed to remove all segregated course aggregate and rake marks. Rakes and lutes used for hand spreading shall be of the type designed for use on asphalt mixtures. Loads shall not be dumped faster than they can be properly spread. Workers shall not stand on the loose mixture while spreading.
- C. Paving Machine Placement: Apply successive lifts of asphaltic concrete in transverse directions with the surface course placed in the direction of surface-water flow. Place in typical strips not less than 10'-0" wide.
- D. Joints: Make joints between old and new pavements, or between successive days' work, to ensure continuous bond between adjoining work. Construct joints to have same texture, density, and smoothness as other sections of asphalt concrete course. Clean contact surfaces and apply tack coat.

3.4 ROLLING AND COMPACTION

- A. The mixture, after being spread, shall be thoroughly compacted by rolling as soon as it will bear the weight of the rollers without undue displacement. Mixture shall be compacted to a minimum 92% of theoretical maximum density. The number, weight, and types of rollers and sequences of rolling operations shall be such that the required density and surface are consistently attained while the mixture is in a workable condition.

- B. Compact mixture with hot hand tampers or vibrating plate compactors in areas inaccessible to rollers.
- C. Breakdown Rolling: Accomplish breakdown or initial rolling immediately following rolling of joints and outside edge. Check surface after breakdown rolling, and repair displaced areas by loosening and filling, if required, with hot material.
- D. Second Rolling: Follow breakdown rolling as soon as possible, while mixture is hot. Continue second rolling until mixture has been thoroughly compacted.
- E. Finish Rolling: Perform finish rolling while mixture is still warm enough for removal of roller marks. Continue rolling until roller marks are eliminated and course has attained maximum density.
- F. Patching: Remove and replace paving areas mixed with foreign materials and defective areas. Cut out such areas and fill with fresh, hot asphalt concrete. Compact by rolling to maximum surface density and smoothness.
- G. Protection: After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened. Erect barricades to protect paving from traffic until mixture has cooled enough not to become marked.

3.5 FIELD QUALITY CONTROL

- A. Independent Testing Laboratory, selected and paid by County of Union, shall be retained to perform construction testing of in-place asphaltic concrete courses for compliance with requirements for thickness and surface smoothness. Asphaltic surface and base courses shall be randomly cored at a minimum rate of one core for every 20,000 square feet of paving. However, no less than three cores in light duty areas and three cores in heavy-duty areas shall be obtained. Coring holes shall be immediately filled with full-depth asphalt or with concrete. Asphaltic Concrete pavement samples shall be tested for conformance with the mix design.
- B. Grade Control: Establish and maintain required lines and elevations.
- C. Thickness: In-place compacted thickness shall not be less than thickness specified on the drawings. Areas of deficient paving thickness shall receive a tack coat and a minimum 1" overlay; or shall be removed and replaced to

the proper thickness, at the discretion of County of Union; until specified thickness of the course is met or exceeded at no additional expense to County of Union.

- D. Surface Smoothness: Testing shall be performed on the finished surface of each asphalt concrete course for smoothness, using 10'-0" straightedge applied parallel with, and at right angles to centerline of paved area. The results of these tests shall be made available to the owner upon request. Surfaces will not be acceptable if exceeding following tolerances for smoothness:

Base Course Surface: 1/4"

Wearing Course Surface: 3/16"

- E. Check surface areas at intervals necessary to eliminate ponding areas. Remove and replace unacceptable paving as directed by the County Engineer.
- F. Compaction: Field density test for in place materials shall be performed by examination of field cores in accordance with one of the following standards:

1. Bulk specific gravity of paraffin-coated specimens: ASTM D-1188.
2. Bulk specific gravity using saturated surface-dry specimens: ASTM D-2726.

Rate of testing shall be one core per 20,000 square feet of pavement, with a minimum of 3 cores from heavy-duty areas and 3 cores from standard-duty areas. Cores shall be cut from areas representative of the project.

Areas of insufficient compaction shall be delineated, removed, and replaced in compliance with the specifications at no expense to the County of Union.

END OF SECTION

SECTION 02525
CURBS AND SIDEWALKS

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Combination concrete curb and gutter
- B. Concrete Curb
- C. Concrete Sidewalk

1.2 RELATED SECTIONS

- A. Section 02100 - Site Preparation
- B. Section 02223 - Excavation, Backfill and Compaction for Pavement
- C. Section 02227 - Aggregate Material
- D. Section 02500 - Soil and Aggregate Base Course
- E. Section 02510 - Bituminous Concrete Base and Surface Courses
- F. Section 03300 - Cast-in-place Concrete
- G. Construction Drawings

1.3 REFERENCES

- A. Standard Specifications for Road and Bridge Construction
- B. ACI 304 - Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete.
- C. ANSI/ASTM D1751 - Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types)
- D. ANSI/ASTM D1752 - Standard Specification for Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction.
- E. ASTM C33 - Standard Specification for Concrete Aggregates
- F. ASTM C94 - Standard Specification for Ready Mix Concrete

- G. ASTM C150 - Standard Specification for Portland Cement
- H. ASTM C260 - Standard Specification for Air-Entraining Admixtures for Concrete.
- I. ASTM C309 - Standard Specification for Liquid Membrane Forming Compounds for Curing Concrete
- J. ASTM C494 - Standard Specification for Chemical Admixtures for Concrete
- K. FS TT-C-800 - Curing Compound, Concrete, for New and Existing Surfaces.

1.4 PERFORMANCE REQUIREMENTS

Contractor shall maintain access for vehicular and pedestrian traffic as required for other construction activities. Utilize temporary striping, flagmen, barricades, warning signs, and warning lights as required.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Forms: Steel, wood, or other suitable material of size and strength to resist movement during concrete placement and to retain horizontal and vertical alignment until removal. Use straight forms, free of distortion and defects. Use flexible spring steel forms or laminated boards to form radius bends as required. The forms shall be of a depth equal to the depth of curbing or sidewalk, and so designed as to permit secure fastening together at the tops. Coat forms with non-staining type coating that will not discolor or deface surface of concrete.
- B. Concrete Materials: Comply with requirements of Section 03300 - Cast-in-Place Concrete for concrete materials, admixtures, bonding materials, curing materials, and others as required.
- C. Joint Fillers: Resilient premolded bituminous impregnated fiberboard units complying with ASTM D 1751 FS HH-F-341, Type II, Class A; or AASHTO M 153, Type I.
- D. Joint Sealers: Non-priming, pourable, self-leveling polyurethane. Acceptable sealants are Sonneborn "Sonolastic Paving Joint Sealant" Sonneborn "Sonomeric CT 1 Sealant", Sonneborn "Sonomeric CT 2 Sealant", Mameco "Vulken 45", or Woodmont Products "Chem-Caulk".

2.2 MIX DESIGN AND TESTING

- A. Concrete mix design and testing shall comply with requirements applicable in Section 03300 - Cast-in-Place Concrete.
- B. Design mix to produce normal weight concrete consisting of Portland cement, aggregate, water-reducing admixture, air-entraining admixture, and water to produce the following properties:
 - 1. Compressive Strength: 4,000 psi, minimum at 28 days, unless otherwise indicated on the Drawings.
 - 2. Slump Range: 2"-5" at the time of placement.
 - 3. Air Entrainment: 5% to 8%.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Proof-roll prepared base material surface to check for unstable areas. Work shall begin only after any unsuitable areas have been corrected. Compaction testing of the base material shall be completed prior to the placement of concrete.
- B. Surface Preparation: Remove loose material from compacted base material surface to produce a firm, smooth surface immediately before placing concrete.

3.2 INSTALLATION

- A. Form Construction
 - 1. Set forms to required grades and lines, rigidly braced and secured.
 - 2. Install sufficient quantity of forms to allow continuance of work and so that forms remain in place a minimum of 24 hours after concrete placement.
 - 3. Check completed formwork for grade and alignment to following tolerances:

Top of forms not more than 1/8" in 10'-0".
Vertical face on longitudinal axis, not more than 1/4" in 10'-0".

4. Clean forms after each use, and coat with form release agent as often as required to ensure separation from concrete without damage.

B. Concrete Placement

1. Comply with requirements of Section 03300 - Cast-in-Place Concrete.
2. Do not place concrete until base material and forms have been checked for line and grade. Moisten base material if required to provide uniform dampened condition at time concrete is placed. Concrete shall not be placed around manholes or other structures until they are at the required finish elevation and alignment.
3. Place concrete using methods which prevent segregation of mix. Consolidate concrete along face of forms and adjacent to transverse joints with internal vibrator. Keep vibrator away from joint assemblies, reinforcement, or side forms. Consolidate with care to prevent dislocation of dowels, and joint devices.
4. Deposit and spread concrete in continuous operation between transverse joints, as far as possible. If interrupted for more than $\frac{1}{2}$ hours, place construction joint. Automatic machine may be used for curb and gutter placement at Contractor's option. Machine placement must produce curbs and gutters to required cross section, lines, grades, finish, and jointing as specified for formed concrete. If results are not acceptable, remove and replace with formed concrete as specified.

C. Joint Construction

1. Contraction Joints: If joints are specified, the curb or gutter shall be constructed in uniform sections of the length specified on the plans. The joints between sections shall be formed either by steel templates $\frac{1}{8}$ inch in thickness, of a length equal to the width of the gutter or curb, and with a depth which will penetrate at least 2 inches below the surface of the curb and gutter; or with $\frac{3}{4}$ -inch thick preformed expansion joint filler cut to the exact cross section of the curb or gutter;

or by sawing to a depth of at least 2 inches while the concrete is between 4 to 24 hours old. If steel templates are used, they shall be left in place until the concrete has set sufficiently to hold its shape, but shall be removed while the forms are still in place. Sidewalks shall have tooled weakened place construction joints at 5 feet intervals, and expansion joints at 25 feet unless indicated otherwise on the drawings.

2. Longitudinal Construction Joints. Concrete curb, concrete gutter, combination concrete curb and gutter, where specified on the plans, shall be tied to concrete pavement with $\frac{1}{2}$ inch round, reinforcement bars of the length and spacing shown on the plans.
 3. Transverse Expansion Joints. Transverse expansion joint in curb, curb and gutter, gutter or sidewalk shall have the filler cut to the exact cross section of the curb, curb and gutter, gutter or sidewalk. The joints shall be similar to the type of expansion joint used in the adjacent pavement.
- D. Joint Fillers: Extend joint fillers full-width and depth of joint, and not less than $\frac{1}{2}$ " or more than 1" below finished surface where joint sealer is indicated. If no joint sealer, place top of joint filler flush with finished concrete surface. Furnish joint fillers in one-piece lengths for full width being placed, wherever possible. Where more than one length is required, lace or clip joint filler sections together.
- E. Joint Sealers: All joints shall be sealed per manufacturer's recommendations.

3.3 CONCRETE FINISHING

- A. After striking off and consolidating concrete, smooth surface by screening and floating. Adjust floating to compact surface and produce uniform texture. After floating, test surface for trueness with 10'-0" straightedge. Distribute concrete as required to remove surface irregularities, and refloat repaired areas to provide continuous smooth finish.

- B. Work edges of sidewalks, gutters, back top edge of integral curb, and formed joints with an edging tool, and round to ½" radius. Eliminate tool marks on concrete surface. After completion of floating and troweling when excess moisture or surface sheen has disappeared, complete surface finishing, as follows:
1. Inclined Slab Surfaces: Provide coarse, non-slip finish by scoring surface with stiff-bristled broom perpendicular to line of traffic.
 2. Curbs, gutters, and walks: Broom finish by drawing fine-hair broom across surface perpendicular to line of traffic. Repeat operation as necessary to produce a fine line texture.
- C. Do not remove forms for 24 hours after concrete has been placed. After form removal, clean ends of joints and point up any minor honeycombed areas. Remove and place areas or sections with major defects, as directed.
- D. Protect and cure finished concrete paving using acceptable moist-curing methods, more particularly described in the "water-curing" section of ACI 308-81.

3.4 BACKFILL

After the concrete has set sufficiently, the spaces in front and back of the curb and gutter or sidewalk shall be refilled to the required elevation with suitable material which shall be compacted until firm and solid and neatly graded.

3.5 CLEANING AND ADJUSTING

- A. Sweep concrete pavement and wash free of stains, discolorations, dirt, and other foreign material just prior to final inspection.
- B. Protect concrete from damage until acceptance of work. Exclude traffic from pavement for at least 14 days after placement. When construction traffic is permitted, maintain pavement as clean as possible by removing surface stains and spillage of materials.

END OF SECTION

SECTION 02601
UTILITY TEST PITS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS AND SECTIONS

- A. Section 02100 - Site Preparation
- B. Section 02510 - Bituminous Concrete Base Course and Surface Course
- C. Section 02525 - Curbs and Sidewalks

1.2 DESCRIPTION OF WORK

- A. Utility test pits shall be excavated by hand at locations either shown on the plans or where designated by the County of Union in order to locate underground structures or utilities which may conflict with new installations or which are to be main utility connection points.

1.3 QUALITY ASSURANCE

- A. Codes and Standards: Perform work in accordance with the appropriate utility company and/or municipality requirements.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Excavated and re-used materials for subsurface fill as specified in Section 02200 - Earthwork.
- B. Aggregate fill as specified in Section 02227.
- C. Imported subsurface fill material approved by the respective utility company the County Engineer.
- D. Bituminous pavement material as specified in Section 02510.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Have each affected utility marked out on the ground by the respective utility company.
- B. Notify and coordinate with local traffic control authorities for procedures in maintaining or detouring current traffic patterns during construction.
- C. Notify and coordinate with utility companies for on-site presence of witness or inspector for their respective utility during test pit excavation operations.

3.2 TEST PIT EXCAVATION

- A. The Contractor shall excavate by hand at locations shown on the plans or designated by the County Engineer. Contractor shall excavate to the limits and depths that may be necessary in order to locate underground structures or utilities. It shall be the Contractor's responsibility to measure and record the horizontal and vertical location of all utilities encountered during test pit excavations and submit this information to the County Engineer.
- B. All test pits indicated on the plans or ordered by the County of Union shall be excavated by hand a minimum of one week prior to start of construction. The information obtained from the test pits will enable the County Engineer to make any necessary adjustments in utility service connection alignment prior to construction in case of conflicts. The Contractor shall make no claim for additional compensation on account of these adjustments. Construction shall not begin until the County of Union gives authorization to proceed after all test pits have been excavated and necessary information has been submitted to the County Engineer.

3.3 SUBMITTALS

- A. Filed Data: Horizontal and vertical location of all utilities encountered during test pit excavations shall be recorded and submitted to the County of Union prior to utility services installation to allow ample time for analysis.

END OF SECTION

SECTION 02081 ASBESTOS ABATEMENT

PART 1 – GENERAL

1.01 DESCRIPTION OF WORK

- A. Remove all asbestos- containing materials (ACM) that will be impacted by the proposed renovation and at all areas that will be affected or impacted by the work in this Contract. All asbestos material is to be disposed of as ACM waste. The Asbestos Contractor shall provide all plant, labor equipment and materials complete for performance of the Work in accordance with Contact Document.
1. Any material not listed or addressed in Part 4 of this Specification Section must be assumed to be asbestos- containing material. The Contractor shall notify the Project Officer immediately if any materials that are not listed encounter, who will then notify the Authority's Industrial Hygienist and Environmental Consultant. Work shall cease immediately and the work area vacated. Bulk sampling of this material will be conducted by the Authority's Environmental Consultant. Work shall not commence until the results of the bulk sample analysis has been provide in writing by the Authority's representative indicating that the material is asbestos-containing, the Authority's Industrial Hygienist will provide procedure for the abatement of the material. This work will be paid as an extra to the Contractor.
 2. Should the Contractor proceed to work without notifying the Authorities of the untested materials encounter or other discrepancies, this will result in the Contractor being invoiced for the cost of the resulting environmental clean-up of the basement and other environmental associated cost, including, but not limited to, the containment of perishable items and non-perishable items such as books, computers, rugs, etc. The Authority reserves the right to utilize any of its certified "Requirement" Asbestos Contractor to conduct any such clean-up in an effort to provide a safe environment for the workers in the building.
- B. Perform the following abatement work:
- A. Asbestos removal
 - a. Contractor shall remove asbestos containing 9" x 9" vinyl floor tile in that indicated room. Approximately 100 sq. ft.
 - b. Contractor shall remove the asbestos containing plaster located near the main Paper Storage area and spots throughout the basement including ceiling plaster above the suspended ceiling. Any plaster visible throughout the basement is considered containing asbestos.
 - c. Contractor shall remove the water damage plywood sheets from the two (2) windows located in the south wall of the Break Room. The wood paneling below the two windows must also be removed. About 180sq. ft.

- d. Once removed all remaining components shall be abrasively cleaned by the Contractor using HEPA vacuums and biocide solution and treated with antimicrobial sealant.
 - e. The contractor shall remove all the water damage paper contents/ trash from the Storage Room and dispose of. If they cannot be disposed of they shall be HEPA vacuumed by a Microbial remediation contractor and sealed in clear polyethylene bags. These bags shall be stored in an area outside the occupiable spaces in the building.
 - f. The Contractor shall remove the drywall walls from floor to ceiling that separates the Storage Area from the Main Room in the basement this sheet rock will then be safely disposed of.
 - g. Contractor shall create a containment area including HEPA filtered air scrubbers and polyethylene sheeting should be utilized by a qualified microbial remediation contractor during all removal and cleaning activities. This Air Lock system shall contain a Curtained Doorway to allow ingress or egress from one room to another.
 - h. The Contractor shall remove and then replace all ceiling tiles from the basement Men's Room. (Approximately 150 sq. ft.)
 - i. The Contractor shall engage a microbial remediation Contractor to clean all of the components of the HVAC system including the duct work which serviced the basement.
 - j. The Contractor shall detail clean the entire basement area, including the furniture and its contents utilizing HEPA vacuums and biocide solutions. During the cleaning, HEPA air filtration devices should be operated in the work areas.
- C. The abatement contractor shall have its supervisor hold and document a pre-abatement safety tool-box meeting, with project monitors, the Project Officer or his/her designee, and the GC to review safe work practices and emergency communications program for the Project. The abatement contractor's supervisor and the Authority's Environmental Consultant's project monitor shall also ensure proper fire extinguishing equipment present, a competent person is knowledgeable in the use of fire extinguishing equipment, and emergency exit plans and phone numbers are posted in the immediate vicinity of work areas.
- D. The Authority's environmental consultant will sample all materials identified as assumed ACM in Part 4 of section 02081. The Contractor shall provide access to the consultant to perform the testing and no additional costs will be paid by the Authority for the time it takes to perform the testing. The Authority shall receive a credit change order for any materials that are identified as non-ACM through bulk sample analysis. This credit change order shall be calculated by the Authority's Change Order Unit utilizing current market rates and work procedures outline in section 02081.

- E. The Contractor shall field verify the amount of ACM and familiarize himself in all variable field conditions in the basement before the submission of their bid
- F. ACM shall be properly handled, packaged, and transported for disposal in an asbestos-only landfill.
- G. All work shall be accomplished in strict adherence to the project Specification and Drawings, applicable Federal, State, And Local Regulations. Whenever there is a conflict or overlap of the above references, the more stringent provision shall apply.
- H. The Contractor industrial hygiene practice during asbestos abatement will be monitored by the Authority's Environmental Consultant. The Contractor shall be responsible for monitoring his own construction safety work practices for compliance with the OSHA regulations.
- I. The Asbestos Contractor shall provide the best available technology, and state-of-the-art procedures and methods of execution, clean-up, disposal, and safety.
- J. The Contractor will be required to obtain at his own expense appropriate variances from regulatory agencies as required to complete the safe removal of asbestos containing material as described in this specification.

1.02 PHASING OF WORK

- 1. The Asbestos Contractor shall perform and complete the abatement activities of asbestos-containing materials during non-work hours. No abatement operations will be allowed when building occupants are in the building. It is the Contractor's responsibility to ensure that all work including successful air clearance testing and analysis, as required, is completed prior to the return of building occupant.

1.03 AUTHORITY TO STOP WORK

- A. The Authority representative the Authority's Environmental Consultant shall have the authority to stop the abatement work at any time a determination is made that conditions are not within Specifications and applicable regulations. The stoppage of work shall continue until conditions have been corrected to the satisfaction of the Authority's representative and Authority's Environmental Consultant. Standby time to resolve the problems shall be at the Contractors expense.

1.04 SITE REQUIRMENTS

- A. Noise Controls: Provide mufflers on all equipment to be used by the Contractor. Observe local laws regarding noise control.

- B. Wastewater: All water used by the Contractor during asbestos abatement activities shall be collected and passed through water filtration system capable of filtering particles down to 5 microns prior to being discharged into the sanitary sewer. The Contractor shall be responsible for connection to the sanitary sewer, and other items necessary to collect, transport, filter, and dispose of the wastewater.

1.05 HEALTH AND SAFETY

- A. Toxic Effects: The Contractor shall assume all responsibility for any toxic effects to workers from the air supplied to respirators, or from toxic or damaging vapors or residues resulting from the use of encapsulate and/ or wetting agents or other substances used by the Contractor during construction.
- B. Chemical/Biological Hazard: The known Chemical, Biological hazard on site includes asbestos-containing materials and debris. The Contractor shall provide materials, equipment and training to its workers to ensure their protection from these and any other chemical/biological hazards which may be identified during the course of this work.
- C. Physical Hazard: The contractor shall provide safety equipment and training to his workers to ensure their protection from any physical hazards including but not limited to trip/ fall hazards, working at elevation. Heat stress, contact with energized (hot) active equipment, noise, overhead bump hazards, and electrical shock that may be present during the Work.
- D. Safety Act: The Williams- Steiger Occupational and Safety Health Act (OSHA) of 1970, as amended, shall be strictly complied with during the course of this project. This Act shall govern the conduct of the Contractor's workmen, tradesmen, materialmen, and subcontractors, and of visitors to the project.
- E. Accident Prevention: In order to protect the lives and health of his employees, the Contractor shall comply with all pertinent provisions of the latest edition of the "Manual of Accident Prevention in Construction" issued by the Associated General Contractors of America, Inc. and shall maintain an accurate record of all accidents which occur during the project. An injury or loss of life must be immediately reported by the Contractor to the Authority, and a copy of the Contractor's report to his insurer of an accident must be provided by Authority.
- F. Emergency Response: The Contractor shall establish an Emergency Response Team made of members of his work force. Team members shall be trained, organized, and capable of responding in the event of an accident, fire, or other emergency. The contractor shall designate a site Safety Coordinator to train team regarding the location and use of site-specific fire/life safety equipment. As a minimum requirement, members of the Emergency Response Team shall be knowledgeable in standard first aid and CPR techniques, fire extinguisher use, and evacuation procedure.
- G. Workmen Protection: The Contractor shall provide and maintain all safety measures necessary to properly protect workmen

- H. Emergency Action: In an emergency affecting the safety of life, the work, or adjoining property, the contractor, to prevent such threatened loss or injury without special instructions or authorization from the Authority or Engineer is hereby permitted to act in his discretion.
- I. Hazard Communication Act: The Contractor shall comply with the Hazard Communication Standard promulgated by the Occupational Safety and Health Administration (OSHA No. 29 CFR 1910.1200). This program ensures that all employers provide the information they need to inform all employees properly and to design and put in place employee protection program. It also provides necessary hazard information to employees so they can participate in, and support, the protective measures needed at their work place. The contractor shall ensure that labels or other forms of warning are legible in English. Employer having employees who speak other languages may add the information in their languages. See OSHA 29 CFR 1910.1200 for more details.

1.06 WORK SUPERVISION AND COORDINATION

- A. Abatement Contractors Supervisor: From the start of work through to the project completion, the Contractor shall have on-site responsible and competent supervisors who possess valid NJSDO and NJDEP Supervisor certifications. As a minimum, the Asbestos Contractor's Supervisor shall meet the qualifications as required by Article 1.12 for a job supervisor. The supervisor shall be on site during all working hours. When the Supervisor must leave site during work, a temporary Supervisor shall be appointed.
- B. Quality of Work: The Supervisor shall supervise, inspect and direct the Work competently and efficiently, devoting such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. The Supervisor shall be responsible to see that Work complies accurately with the Contract Documents, and that all Work installed is of good quality and workmanship.

1.07 SUBMITTALS

A. Pre-Project Submittals:

1. Provide Certificates of Insurance naming the Authority, Union County, and the City of Elizabeth as additional insured.
2. Health and Safety Plan: Provide a written Health and Safety Plan addressing procedures for work place safety. As a minimum, the following topics shall be addressed in the plan:
 - a. Hazard Communication. Procedure on how physical and health hazards associated with the WORK are identified and communicated to employees, and name of the person responsible for implementation of the Hazard Communication Program.
 - b. Guidelines for assessment and prevention of heat and stress.
 - c. Procedure for using ladders safely.
 - d. Electrical safety procedures.

3. Emergency Action Plan: Provide a written Emergency Action Plan that outlines the contingency actions to be performed or emergencies including fire, accident, and power failure, supplied air system failure, breach of work areas containment, unexpected asbestos contamination in the site area and on the adjoining grounds, or spilling of asbestos material being hauled to storage and /or disposal. This Plan shall identify the manner in which emergencies are announced, emergency escape procedure and routes, and procedure to account for all employees after evacuation. The plan shall identify that person responsible for fire/life safety duties including the Site Safety Coordinator, persons responsible for fire prevention equipment and the control of fuel source hazard, and the members of the Emergency Response Team (see Paragraph "Emergency Response" of this Section). This plan shall be readily available for review by all workers.
4. Fall Protection Plan: Provide a written Fall Protection Plan that outlines the actions to be performed to protect personnel when they are working at elevation. The plan shall detail specific fall protection devices to be utilized, training provide to personnel for same and training of designated competent person in charge of responsible for the elevated work site.
5. Provide proof of written notifications required by the Paragraph" Permits, State License and Notifications" of this Section. Provide proof that all required permits and variances have been obtained.
6. Provide documentation of compliance with all requirements of the paragraph" Requirements and Qualifications" of this Section. Submittal shall include:
 - a. Proof that the job supervisor, foremen, and asbestos abatement workers meet State certifications and license requirements.
 - b. Proof of a current medical surveillance program for all Contractors' personnel to work on this project.
7. Provide proof of a respiratory protection program. Submit level of respiratory protection intended for each operation required by the project.
8. Provide proof of historic airborne fiber data for similar types of project. Submit airborne asbestos fiber monitoring data from an independent air monitoring firm to substantiate selection of respiratory protection proposed. Data shall include the following for each procedure required by the work: 1) date of measurement; 2) type of work task monitored; 3) methods used for sample collection and analysis, and; 4) number, duration and result of sample taken.
9. Provide proof that a landfill site has been located, and arrangements for transport and disposal of asbestos-containing or asbestos-contaminated materials have been made. Provide the name and location of the landfill, and waste transport company, if applicable. Landfill shall be an asbestos-only receptor.
10. Provide manufacturer's literature on all proposed job related equipment and products to be used on this project. Include Material Safety Data Sheets (MSDS) for encapsulate, fire retardant plastics, and other chemical to be used on this project.
11. Provide a detail Asbestos Removal and Disposal Work Plan that describes all aspects of the work to be performed for this project. The Plan shall include a detailed description of the work area enclosure. Provide shop drawings (with dimension and location) of proposed decontamination facilities and work areas. These drawings shall indicate the following: 1)

areas to be sealed off and work area boundaries; and 2) proposed layout and location of the decontamination enclosure systems. Include a detailed description of any modifications or changes to be made to the specified negative pressure work areas enclosure.

12. Provide a sample of the daily log proposed for use. Minimally, the log should include the date (s) and time (s) when all personnel enter and leave the work areas (s).

C. During Work Submittal:

1. Scheduling of Work Changes: Any changes in the Schedule of Work proposed by the Contractor shall be submitted for approval no later than seven day prior to the commencement date of the proposed change. A revised Schedule shall be submitted at the end of each week.
2. A certified signed, and completed copy of each "Waste Shipment Record" form used, and receipts from the landfill operator that acknowledge the Contractor delivery (s) of material, shall be submitted within thirty (30) days following removal of ACM building.

D. Post Project Submittals:

1. A copy of the building logbook.
2. Compilation in chronological order of all OSHA personal air monitoring records pertaining to this project
3. Compilation of all complete and signed Waste Shipment Record forms, bills of lading, or disposal receipts pertaining to this project.
4. Copies of notifications and checks to applicable agencies (see Subparagraph Submittal Information" of this Section) that the asbestos abatement project has been completed.
5. Copies of the workers' license (NJSDOL and City of Elizabeth DEP) that actually performed the work on the project.

1.07 FIRE PROTECTION AND EMERGENCY EGRESS

- A. The Contractor shall be responsible for the security and safeguarding of all areas turned over by the Authority to the Contractor. The Contractor shall designate to his workers and other building occupants the means of egress in case of emergency.
- B. The Contractor shall establish emergency and fire exit from the work area first aid kit, 2 full sets of protective clothing and respirators shall be provided for use by qualified emergency personnel in the clean room of the decontamination facility
- C. The Contractor shall provide fire watch and logbook throughout the entire term of the project, to protect against fire and unauthorized entry into and around the work area. Any intrusion or incident shall be documented in the log book. Fire watch personnel shall be present during off hours shift such as night shift, weekends and holidays when abatement works to be in progress.
- D. Notify the local police department and fire department that asbestos battement work is being conducted. As a minimum, Facility, date work is to be performed, drawings indicating the areas to undergo abatement.

1.08 CLEAN-UP

- A. Asbestos Related Clean-up: all clean-up work related to asbestos abatement work shall be in strict accordance with general technical requirements.
- B. Final Site Cleaning: Upon completion of the work, the Contractor shall have remove all temporary construction, decontamination facilities, and unused materials placed on site by the Contractor, put the premises in a neat and clean condition; and sweeping, cleaning, and washing required to restore the condition of the site to its original conditions.

1.09 CODE, PERMITS, AND STANDARDS

- A. The Contractors shall be solely responsible for compliance with all applicable federal, state, and local laws, ordinances, code, rules, and regulations that govern. All Work installed shall comply with all applicable codes and regulations as amended.
- B. Before starting the Work, the Contractor shall examine the Technical Specification for compliance with codes and regulations applicable to the work and shall immediately report any discrepancy to the Authority's Environmental consultant.
- C. Where conflict among requirements or with these specifications exists, the more stringent requirements shall apply.
- D. Permits, State License, and Notification: the Contractor shall be responsible for obtaining necessary permits, variances, state licenses, and certification of personnel in conjunction with asbestos removal, hauling, and disposition and shall provide timely notifications of such as may be required by federal, state, regional, and local and notification shall be paid by the Contractor. Contractor shall use all notifications form where applicable.
 - 1. Agency Notification: At least 10 days prior to commencement of any asbestos removal, the Contractor shall prepare written notifications to EPA Region2, to the New Jersey State City of Elizabeth Department of Environmental Protection Asbestos Control Program and all other applicable agencies jurisdiction.

1.10 TERMINOLOGY

The following commonly-used terms are defined in the context of these specifications:

- A. Abatement: Procedures to control or decrease fiber release from asbestos-containing building materials or insulations material containing asbestos. Include removal, enclosure, and encapsulation.
- B. Asbestos-Containing Material (ACM): Any material or product which contains more than 1 percent asbestos.
- C. Aggressive Sampling: Air monitoring samples collected while a leaf blower, fans, or other such devices are used to generate air turbulence within the work area.

- D. Air Filtration Device (AFD) – A portable local exhaust system equipped with HEPA filtration, capable of maintaining a constant low velocity air flow into contaminated areas from adjacent, uncontaminated areas and capable of maintaining a negative air pressure with respect to the adjacent, uncontaminated areas.
- E. Air Lock: A system for permitting ingress or egress to the work area while permitting minimal air movement between a contaminated area and an uncontaminated area, typically consisting of two curtained doorways placed a minimum of three feet apart.
- F. Air Monitoring: the process of measuring the fiber content of a specific volume of air in a stated period of time. Personal air sampling results shall be calculated to reflect the employee's eight-hour time weighted average (TWA) exposure. Areas sampling results are reported directly, without calculating the TWA.
- G. Amended Water: water to which a surfactant has been added.
- H. Asbestos Removal Encapsulant: A chemical solution used in place of amended water during asbestos removal to penetrate, bind, and encapsulate the asbestos-containing material.
- I. Authorized Visitors: Authority's Environmental Consultant or representative of any regulatory or other agency having jurisdiction over the project.
- J. Authority shall be in the City of Elizabeth construction Authority, its agents, servants, employees, or designees as the case may be.
- K. Authority's Environmental Consultant: the Authority's agent who is authorized to exercise general contract administration and industrial hygiene inspection of the work under the direction of the Authority.
- L. Certified Industrial Hygienist (CIH): One certified in the comprehensive practice of industrial hygiene by the American Board of Industrial Hygiene.
- M. Class II asbestos work: Activities involving the removal of AMC which is not thermal system insulation or surfacing material. This includes, but is not limited to, the removal of asbestos-containing wallboard, floor tile and sheeting, roofing and siding shingles, and construction mastic. Class I asbestos work includes the removal of thermal system or surfacing material.
- N. Competent Person: Definition and responsibilities as set down in 29 CFR 1926.1101 (b) and as outlined herein.
- O. Curtained Doorway: A device to allow ingress or egress from one room to another while permitting minimal air movement between the rooms.
- P. Decontamination Enclosure System: a series of connected rooms for the decontamination of workers (a Personnel Decontamination Enclosure System) or if materials and equipment (equipment Decontamination Enclosure System).
- Q. Equipment Decontamination Enclosure System: A decontamination system for waste materials and equipment, typically consisting of a designated area of the work area, a wash room, and a holding area, with an air lock between the holding area and the non-work area. Not to be used for personnel entry/exit.
- R. Encapsulant (Sealant): A liquid material which can be applied to ACM and which controls the possible release of asbestos fibers from the material, either by creating a membrane over the surface (binding encapsulant) or by penetrating into the material and binding its components together (penetrating encapsulant)
- S. Encapsulation: Application of an encapsulant to asbestos-containing building materials to control the possible release of asbestos fibers into the ambient air.

- T. Enclosure: Procedures necessary to completely enclose ACM behind air-tight, impermeable, permanent barriers.
- U. Excursion Limit (EL): the EL an airborne concentration of asbestos to which no employee shall be exposed when not using respiratory protection. The EL is 1.0 f/cc as averaged over a 30 minute period.
- V. Fixed Object: a unit of equipment of furniture in the work area which cannot be removed from the work area
- W. Friable: Any material which, when dry, may be crumbled, pulverized, or reduced to power by hand pressure.
- X. Full Face piece High Efficiency Respirator (FFHER): A respirator which covers the wearer's entire face from the hairline to below the chin and which is equipped with HEPA filter
- Y. Half Mask High Efficiency Respirator (HMHER): A respirator which covers one-half of the wearer's faced, from the bridge below the chin, and is equipped with a HEPA filter.
- Z. HEPA Filter: A high efficiency particulate air (HEPA) filter capable of trapping and retaining 99.97 percent of the fibers of 0.3 micrometer or larger in diameter.
- AA. HEPA Vacuum Equipment: A high efficiency particulate air (HEPA) filtered vacuuming equipment having a UL 586 filter system capable of collecting and retaining asbestos fibers.
- BB. Large Asbestos Project: Large asbestos project shall mean an asbestos project involving the disturbance (e. g. removal, enclosure, and encapsulation) of 260 linear feet or more of friable asbestos-containing material or 160 square feet or more of friable asbestos-containing material.
- CC. Lockdown: Procedure of applying an encapsulant as a protective coating or sealant to a surface from which ACM has be removed in order to control and minimize airborne asbestos fiber generation that might result from residual asbestos-containing material
- DD. Minor Asbestos Project: Minor project shall mean a project involving the disturbance (e.g. removal, enclosure, encapsulation, and repair) of 25 linear feet or less of friable asbestos-containing material or 10 square feet or more of friable asbestos-containing material.
- EE. Monitor Representation: Authority's Third Party Monitor who is unauthorized to perform industrial hygiene inspection of the work area.
- FF. Movable Object: A unit of equipment or furniture which can be removed from the work area.
- GG. Plasticize: To cover floors and walls with plastic sheeting as herein specified.
- HH. Permissible Exposure Limit (PEL): the PEL is an airborne concentration of ACM to which no employee shall be exposed when not using respiratory protection. The OSHA PEL is 0.1 f/cc expressed on an 8-hour time weighted average (TWA).
- II. Personnel Decontamination Enclosure System: A decontamination system for personnel and limited equipment, typically consisting of an equipment room, shower room, and clean room, with an air lock between any two adjacent rooms, and a curtained doorway between the equipment room and the non- work area. The decontamination system serves as the only entrance/exit for the work area.
- JJ. Powered Air Purifying Respirator (PAPR): Either a full face piece, helmet, or hooded respirator that powers breathing air to the wearer after the air has been purified through a HEPA filter.
- KK. Regulated Area: An area established by the employer to demarcate areas where Class I, II, and III asbestos work is conducted, and any adjoin area where debris and waste from such asbestos work accumulated; and a work area within which airborne concentrations of asbestos, exceed the permissible exposure limit.

- LL. Removal: The act of removing and transporting asbestos-containing or asbestosis-contaminated materials from the work area to a suitable disposal site.
- MM. Small Asbestos Project: Small asbestos project shall mean an asbestos project involving the disturbance (e.g. removal, enclosure, and encapsulation) of more than 25 and less than 260 linear feet of friable asbestos-containing material or more than 10 and less than 160 square feet of friable asbestos-containing material.
- NN. Surfactant: a chemical wetting agent added to water to improve penetration, this reducing the quality of water required for a given operation or area.
- OO. Tent Procedure: A method of limited application for the removal at any one time less than 260 linear feet and 160 square feet of ACM. Tent procedure shall be accomplished in a constructed or commercial available plastic tent, plasticizing and sealing all surfaces not being abated within periphery forming and enclosure. The tent shall be of 2 layer of 60mil plastic at a minimum, with seams stapled taped airtight and then taped flush with the adjacent tent wall. Engineering control shall include a HEPA unit to continuously exhaust the work area. Negative air shall be demonstrated by the smoke test.
- PP. Type C Respirator: A respirator which supplies air to the wearer from a source outside the work area by means of a compressor.
- QQ. Wet Cleaning: The process of eliminating asbestos contamination from building surface and objects by using cloth, mops, or other cleaning tools which have been dampened with amended water and asbestos removal encapsulant and by afterwards disposing of these cleaning tools as asbestos-contaminated waste.
- RR. Work Area: Designated rooms, spaces, or areas of the project where asbestos abatement actions are to be such abatement actions are to undertaken or which may become contaminated as a result if such abatement actions. A contained work area has been sealed, plasticized, and equipped with airlock entrance or a decontamination enclosure system. A non-contained work area is an isolated or controlled-access area which has not been plasticized.

1.12 REQUIREMENTS AND QUALIFICATIONS

- A. Minimum Experience: The contractor shall have experience with abatement work, as evidenced through participation in a least two asbestos abatement projects of complexity comparable to this project.
- B. Experience and Training: the Contractor's job supervisors, foremen, and workers shall be adequately trained and knowledgeable in the field of asbestos abatement. All personnel engaged in asbestos abatement or related activities shall have both New Jersey DOL and New Jersey DEP certification. All phases of the work shall be executed by skilled craftsmen experience in each respective trade. Proof of such experience shall submit upon request by the Authority. Improperly trained, entrained, or inexperienced personnel shall not be allowed in the work area(s). Personnel shall meet minimum training and experience requirements outlined in this Section.
 - 1. The Contractor's on-site job supervisor shall have successfully completed, within the last twelve months, the NJSDOH- approved course "Supervisor of Asbestos Abatement Projects" and shall be qualified as NJDEP and NJSDEL- certified Contactor/ Supervisor. Course must be provided by an NJSDOH- approved training provider. The

supervisor shall have experience with abatement work, as evidence through participation in at least two asbestos abatement projects of complexity comparable to this project.

2. The job supervisors and foremen shall be thoroughly familiar with and experience in asbestos removal and related work and shall meet the requirements of a competent person set down in OSHA standard 29 CFR 1926.1011.
3. All asbestos abatement workers shall be knowledgeable, qualified, and trained in the removal, handling, and disposal of asbestos material and in subsequent cleaning of the affected environment. All asbestos abatement workers shall be certified as having attended and satisfactorily completed asbestos worker training in accordance with OSHA Standard 28 CFR1926.1101 (k) (3). Course must be provided by an NYDOH-approved training provider.
4. The Contractor's job supervisors, foremen, and asbestos abatement workers shall be certified and license as required by the NJ DOL City of Elizabeth EPA.
5. Prior to commencement of work, all personnel who are to enter the work area shall be instructed in and shall be knowledgeable of the appropriate procedure for personnel protection and asbestos battement. Onsite training in the use of equipment and facilities unique to this job site shall be performed. Emergency evacuation procedure from the work area shall also be included in the worker training.

C. Supervision Requirements: The Contractor shall provide adequate job supervision for all phases of the asbestos abatement work.

1. The contractor shall have the NJSDOL and City of Elizabeth DEP job supervisor present on site whenever work described in this Section is in progress. If the job supervisor leaves the site for any reason qualified and certified supervisors, who meets the requirements of this Section and is familiar with the current status of the work, Representative shall be informed of the substitution. The supervisor must be familiar and experienced with asbestos removal and its related work, safety procedure, and equipment.

D. Worker Medical Examinations: The Contractor shall provide medical examinations for all employees engaged in asbestos removal and disposal operations, in accordance with OSHA Standard 29 CFR 1910.134 (b), 1926.1101, and applicable state examination results are file in his office and available for review and are maintained in accordance with OSHA Standard 29 SFR 1926.1101 (n) (3).

E. Certificate of Worker's Release: Each asbestos abatement worker, workers of other trades and any supervisory personnel submit a Certification of Worker's Release, as required in the Section "submittals".

1.13 TESTING AND INSPECTION REQUIREMENTS AND RESPONSIBILITIES

A. Visual inspections and air monitoring will be performed before, during, and after asbestos abatement to document airborne asbestos fibers concentrations as defined in these specifications.

B. The Authority's Responsibilities:

1. The Authority will employ an industrial hygiene (IH) testing laboratory for air monitoring and clearance testing.
2. Area air samples will be collected and analyzed using NIOSH method 7400. Air samples will be collected during each shift from the work area as required at the decontamination enclosure clean room, and in adjacent non-work areas.
3. Clearance testing by Phase Contrast Microscopy (PCM) and Transmission Electron Microscopy (TEM) will be performed at the written request of the Contractor submitted on a copy of the "Request for Service" form. Air samples will be collected to demonstrate final preoccupancy clearance for work areas within the building. The fiber concentration of each sample must comply with specified clearance level. The authority will provide for collection and analysis of one round sample required to demonstrate clearance in each discrete work area.
4. The Authority's Environmental Consultant will perform inspections of the work area, as specified, upon written request of the Contractor. Submit request on a copy the "Request for Services" form.

C. Contractor's responsibilities:

1. At the beginning of the project, the Contractor shall provide the Authority's representative with a schedule of the proposed abatement. Once the Authority assigns an Environmental Consultant, the Contractor shall be responsible for coordinating its activities with the Environmental Consultant and shall make all notifications of the removal schedule to applicable agencies and the Environmental Consultant within the specified time frame require by the regulatory requirements and as specified herein.
2. CM and TEM air samples that fail to meet the preoccupancy clearances standard shall be paid for by the Contractor. Should a delay occur, due to failure (s) of clearance air testing, all associated expense such as PCM and TEM analysis, and air testing, shall be the responsibilities of the asbestos contractor.
3. The Contractor, at his expense, shall provide OSHA monitoring and all other test required by specified applicable regulations, codes, and standards and any other tests for his use. The use of testing laboratory by the Authority does not release the Contractor from providing testing require for the protection and safety of his employees.
4. The Contractor shall employ an independent IH testing laboratory for collection and analysis of (OSHA) personal air monitoring samples. The laboratory used for air sample analysis shall be successfully participating in the "proficiency Analytical Testing (PAT) Program for Laboratory Quality Control for Asbestos." The monitoring shall be supervised by an Industrial Hygienist certified by the American Board of Industrial Hygiene (A.B.I.H.) Each testing laboratory shall be ELAP and NVLAP certified.
5. From each work area, the Contractor, at his expense, shall collect and analyze (OSHA) personal air monitoring samples. Sampling shall be repeated during each different work

activity. Sample collection and analysis shall be performed using the PSHA Reference Method as outline in 29 CFR 1926.1101, Appendix A.

6. If readers are above 0.01 f/cc, the area must be recleaned and ambient air monitoring shall be conducted by the Authority's Environmental Consultant.
7. The Contractor shall be advised whenever questions arise concerning compliance with standards of quality and completeness of the work, and shall use best efforts to resolve any such questions to the satisfaction of the Authority's Environmental Consultant.
8. Where air monitoring tests and/ or inspections are specified or required, the Contractor shall notify the Authority's Environmental Consultant, in writing, in advance of the required test/ and inspection.
9. The Contractor is responsible for ensuring the work is complete to the level that meets the criteria of the inspections. The Contractor shall perform and inspection of the work to evaluate completeness prior to requesting and inspection by the Authority's Environmental Consultant.

D. Time Requirements for Authority's Environmental Consultant's Inspections and Testing: Where visual inspections or air testing is required to be performed by the Authority's Environmental Consultant, the Contractor shall allow for the following response/ analytical time for completion of the inspection/ test.

1. Where visual inspections are required, allowed 24 hours beginning from the time the Contractor's written request is received by the Authority's Environmental Consultant, for the performance of the inspections.
2. Where PCM and TEM clearance air monitoring test are required, allow 24 hours beginning from the time the Contractor's written request is received by the Authority's Environmental Consultant, to the beginning of the air test.

END OF SECTION

SECTION 03 30 00 - CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.01 SUMMARY

A. Section includes cast-in-place concrete, including formwork, reinforcement, concrete materials, mixture design, placement procedures, and finishes.

B. Related Sections:

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

1.02 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

B. Design Mixtures: For each concrete mixture.

C. Steel Reinforcement Shop Drawings: Placing drawings that detail fabrication, bending, and placement.

D. Formwork Shop Drawings: Prepared by or under the supervision of a qualified professional engineer detailing fabrication, assembly, and support of formwork.

1.03 INFORMATIONAL SUBMITTALS

A. Welding certificates.

B. Material certificates.

C. Material test reports.

D. Floor surface flatness and levelness measurements.

1.04 QUALITY ASSURANCE

A. 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."

- B. Testing Agency Qualifications: An independent agency acceptable to authorities having jurisdiction, qualified according to ASTM C 1077 and ASTM E 329 for testing indicated.
- C. Welding Qualifications: Qualify procedures and personnel according to AWS D1.4/D 1.4M, "Structural Welding Code - Reinforcing Steel."
- D. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:
 - 1. ACI 301, "Specifications for Structural Concrete," Sections 1 through 5.
 - 2. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."
- E. Concrete Testing Service: Engage a qualified independent testing agency to perform material evaluation tests and to design concrete mixtures.
- F. Preinstallation Conference: Conduct conference at Project site.

PART 2 - PRODUCTS

2.01 FORM-FACING MATERIALS

- A. Smooth-Formed Finished Concrete: Form-facing panels that will provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.
- B. 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.

2.02 STEEL REINFORCEMENT

- A. Recycled Content of Steel Products: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 25 percent.
- B. Reinforcing Bars: ASTM A 615/A 615M, Grade 60, deformed.
- C. Plain-Steel Welded Wire Reinforcement: ASTM A 185/A 185M, plain, fabricated from as-drawn steel wire into flat sheets.
- D. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire reinforcement in place. Manufacture bar supports from steel wire, plastic, or precast concrete according to CRSI's "Manual of Standard Practice."

2.03 CONCRETE MATERIALS

- A. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source, throughout Project:
 - 1. Portland Cement: ASTM C 150, Type I/II normal gray
- B. Normal-Weight Aggregates: ASTM C 33, graded.
 - 1. Maximum Coarse-Aggregate Size: 3/4 inch nominal.
 - 2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.
- C. Water: ASTM C 94/C 94M and potable.

2.04 ADMIXTURES

- A. Air-Entraining Admixture: ASTM C 260.
- B. Chemical Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures and that will not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.
 - 1. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.
 - 2. Retarding Admixture: ASTM C 494/C 494M, Type B.
 - 3. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.
 - 4. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.
 - 5. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.
 - 6. Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.

2.05 WATERSTOPS

- A. Flexible Rubber Waterstops: CE CRD-C 513, for embedding in concrete to prevent passage of fluids through joints. Factory fabricate corners, intersections, and directional changes.
- B. Chemically Resistant Flexible Waterstops: Thermoplastic elastomer rubber waterstops, for embedding in concrete to prevent passage of fluids through joints; resistant to oils, solvents, and chemicals. Factory fabricate corners, intersections, and directional changes.
- C. Flexible PVC Waterstops: CE CRD-C 572, for embedding in concrete to prevent passage of fluids through joints. Factory fabricate corners, intersections, and directional changes.
- D. Self-Expanding Butyl Strip Waterstops: Manufactured rectangular or trapezoidal strip, butyl rubber with sodium bentonite or other hydrophilic polymers, for adhesive bonding to concrete, 3/4 by 1 inch.

- E. Self-Expanding Rubber Strip Waterstops: Manufactured rectangular or trapezoidal strip, bentonite-free hydrophilic polymer modified chloroprene rubber, for adhesive bonding to concrete, 3/8 by 3/4 inch.

2.06 CURING MATERIALS

- A. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete.
- B. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. when dry.
- C. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
- D. Water: Potable.
- E. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, dissipating.
- F. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, nondissipating.
- G. Clear, Solvent-Borne, Membrane-Forming Curing and Sealing Compound: ASTM C 1315, Type 1, Class A.
 - 1. VOC Content: Curing and sealing compounds shall have a VOC content of 200 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
- H. Clear, Waterborne, Membrane-Forming Curing and Sealing Compound: ASTM C 1315, Type 1, Class A.
 - 1. VOC Content: Curing and sealing compounds shall have a VOC content of 200 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

2.07 RELATED MATERIALS

- A. Expansion- and Isolation-Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber or ASTM D 1752, cork or self-expanding cork.

2.8 CONCRETE MIXTURES

- 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.

- B. Cementitious Materials: Use fly ash, pozzolan, ground granulated blast-furnace slag, and silica fume as needed to reduce the total amount of portland cement, which would otherwise be used, by not less than 40 percent.
- C. Admixtures: Use admixtures according to manufacturer's written instructions.
 - 1. Use water-reducing high-range water-reducing or plasticizing 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.
 - 3. Use water-reducing admixture in pumped concrete, concrete for heavy-use industrial slabs and parking structure slabs, concrete required to be watertight, and concrete with a water-cementitious materials ratio below 0.50.
- D. Proportion normal-weight concrete mixture as follows:
 - 1. Minimum Compressive Strength: As specified in the Contract Drawings.
 - 2. Maximum Water-Cementitious Materials Ratio: As specified in the Contract Drawings.
 - 3. Slump Limit: As specified in the Contract Drawings.
 - 4. Air Content: As specified in the Contract Drawings.
 - 5. Air Content: As specified in the Contract Drawings.
 - 6. Air Content: Do not allow air content of trowel-finished floors to exceed 3 percent.
 - 7. Synthetic Micro-Fiber: Uniformly disperse in concrete mixture at manufacturer's recommended rate, but not less than 1.0 lb/cu. yd.

2.9 FABRICATING REINFORCEMENT

- A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

2.10 CONCRETE MIXING

- A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M and ASTM C 1116/C 1116M, and furnish batch ticket information.
 - 1. When air temperature is between 85 and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

PART 3 - EXECUTION

3.01 FORMWORK

- 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. Chamfer exterior corners and edges of permanently exposed concrete.

3.02 EMBEDDED ITEMS

- 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.

3.03 STEEL REINFORCEMENT

- A. General: Comply with CRSI's "Manual of Standard Practice" for placing reinforcement.
 - 1. Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing concrete.

3.04 JOINTS

- A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.
- B. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Structural Engineer.
- C. Waterstops: Install in construction joints and at other joints indicated according to manufacturer's written instructions.

3.05 CONCRETE PLACEMENT

- A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed.
- B. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete will be 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.
 - 1. Consolidate placed concrete with mechanical vibrating equipment according to ACI 301.
- C. Cold-Weather Placement: Comply with ACI 306.1.
- D. Hot-Weather Placement: Comply with ACI 301.

3.06 14002 - - 7 -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 specified limits on formed-surface irregularities.
 - 1. Apply to concrete surfaces not exposed to public view.
- B. Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defects. Remove fins and other projections that exceed specified limits on formed-surface irregularities.
 - 1. Apply to concrete surfaces exposed to public view.
- C. Rubbed Finish: Apply the following to smooth-formed finished as-cast concrete where indicated:
 - 1. Smooth-Rubbed Finish: Not later than one day after form removal, moisten concrete surfaces and rub with carborundum brick or another abrasive until producing a uniform color and texture. Do not apply cement grout other than that created by the rubbing process.
 - 2. Grout-Cleaned Finish: Wet concrete surfaces and apply grout of a consistency of thick paint to coat surfaces and fill small holes. Mix one part portland cement to one and one-half parts fine sand with a 1:1 mixture of bonding admixture and water. Add white portland cement in amounts determined by trial patches so color of dry grout will match adjacent surfaces. Scrub grout into voids and remove excess grout. When grout whitens, rub surface with clean burlap and keep surface damp by fog spray for at least 36 hours.
 - 3. Cork-Floated Finish: Wet concrete surfaces and apply a stiff grout. Mix one part portland cement and one part fine sand with a 1:1 mixture of bonding agent and water. Add white portland cement in amounts determined by trial patches so color of dry grout will match adjacent surfaces. Compress grout into voids by grinding surface. In a swirling motion, finish surface with a cork float.
- D. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces unless otherwise indicated.

3.07 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. Scratch Finish: While still plastic, texture concrete surface that has been screeded and bull-floated or darbied. Use stiff brushes, brooms, or rakes to produce a profile amplitude of 1/4 inch in one direction.
 - 1. Apply scratch finish to surfaces to receive concrete floor toppings.

- C. Float Finish: Consolidate surface with power-driven floats or by hand floating if area is small or inaccessible to power driven floats. Restraighten, cut down high spots, and fill low spots. Repeat float passes and restraightening until surface is left with a uniform, smooth, granular texture.
 - 1. Apply float finish to surfaces to receive trowel finish and to be covered with fluid-applied or sheet waterproofing, built-up or membrane roofing, or sand-bed terrazzo.

- D. 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 to be covered with resilient flooring, carpet, ceramic or quarry tile set over a cleavage membrane, paint, or another thin-film-finish coating system.
 - 2. Finish and measure surface so gap at any point between concrete surface and an unleveled, freestanding, 10-ft.- long straightedge resting on two high spots and placed anywhere on the surface does not exceed 1/8 inch.

- E. Trowel and Fine-Broom Finish: Apply a first trowel finish to surfaces where ceramic or quarry tile is to be installed by either thickset or thin-set method. While concrete is still plastic, slightly scarify surface with a fine broom.
 - 1. Comply with flatness and levelness tolerances for trowel-finished floor surfaces.

- F. Broom Finish: Apply a broom finish to exterior concrete platforms, steps, ramps, and elsewhere as indicated.

3.08 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 301 for hot-weather protection during curing.

- B. Evaporation Retarder: Apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.

- C. Cure concrete according to ACI 308.1, by one or a combination of the following methods:
1. Moisture Curing: Keep surfaces continuously moist for not less than seven days.
 2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears during curing period using cover material and waterproof tape.
 3. Curing Compound: Apply uniformly in 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. Maintain continuity of coating and repair damage during curing period.
 - a. Removal: After curing period has elapsed, remove curing compound without damaging concrete surfaces by method recommended by curing compound manufacturer unless manufacturer certifies curing compound will not interfere with bonding of floor covering used on Project.
 4. 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.

3.9 CONCRETE SURFACE REPAIRS

- A. Defective Concrete: Repair and patch defective areas when approved by Structural Engineer. Remove and replace concrete that cannot be repaired and patched to Structural Engineer's approval.

3.10 FIELD QUALITY CONTROL

- A. Testing and Inspecting: Owner will engage a qualified testing and inspecting agency to perform field tests and inspections and prepare test reports.

END OF SECTION

SECTION 14002 - 07 92 00 – JOINT SEALANTS

PART 1 – GENERAL

1.1 Summary

a. Section includes:

- Interior silicone and polyurethane sealants
- Interior latex sealants
- Interior sanitary silicone sealants
- Metal lap joint sealants
- Threshold and sheet metal bedding sealants
- Joint accessories

1.2 References

ASTM C 510- Standard Test Method for Staining and Color Change of Single- or Multi-component Joint Sealants

ASTM C 719- Standard Test Method for Adhesion and Cohesion of Elastomeric Joint Sealants Under Cyclic Movement (Hockman Cycle)

ASTM C 794- Standard Test Method for Adhesion-in-Peel of Elastomeric Joint Sealants

ASTM C 834- Standard Specification for Latex Sealants

ASTM C 920- Standard Specification for Elastomeric Joint Sealants

ASTM C 1087- Standard Test Method for Determining Compatibility of Liquid-Applied Sealants with Accessories Used in Structural Glazing Systems

ASTM C 1193- Standard Guide for Use of Joint Sealants

ASTM C 1247- Standard Test Method for Durability of Sealants Exposed to Continuous Immersion in Liquids

ASTM C 1248- Standard Test Method for Staining of Porous Substrate by Joint Sealants

ASTM C 1311- Standard Specification for Solvent Release Sealants

ASTM D 2203- Standard Test Method for Staining from Sealants

1.3 Submittals

- a. Product Data. For each type of product, include preparation requirements and application instructions.
- b. Manufacturer's specifications and other data needed to prove compliance with the specified requirements.
- c. Submit color charts for each sealant type for initial selection.
- d. Submit standard cured color samples for each sealant type illustrating selected colors.
- e. Test reports:
 1. Submit results of laboratory pre-construction testing.
 2. Submit results of field pre-construction testing.
 3. Submit manufacturer's recommendations for joint preparation, priming, and joint accessory materials based on test results.
 4. Submit manufacturer's recommended installation procedure modifications resulting from field adhesion tests.
- f. Manufacturer's installation instructions:
 1. Submit manufacturer's published installation procedures.
 2. Include instructions for completing sealant intersections when different materials are joined.
 3. Include instructions for removing existing sealants and preparing joints for new sealant.
- g. Manufacturer's certificate:
 1. Certify products are suitable for intended use and products meet or exceed specified requirements.
 2. Certify applicator is approved by manufacturer.
- h. Qualifications data:
 1. Submit applicator's qualifications, including reference projects of similar scope and complexity, with current phone numbers and contact names of Architects and Owners for verification.
- i. Manufacturer's field reports
 1. Indicate time present at job site.
 2. Include observations, indicate compliance with manufacturer's installation instructions, and supplemental instructions provided to installers.

1.5 Closeout Submittals

- a. Submit instructions for repairing and replacing failed sealant joints.

1.6 Quality Assurance

- a. Pre-construction testing:
Test each elastomeric sealant and joint substrate in accordance with the following, before beginning work of this section:
 - Install sealants in field samples using manufacturer's joint preparation methods.
 - Remove existing sealant, clean joint, and install new sealant using manufacturer's recommended joint preparation methods.
 - Install field-test joints in locations to be reviewed by Owner.
 - Use manufacturer's standard field adhesion test to verify joint preparation and primer required to obtain optimum adhesion of sealants to joint substrate.
 - When test indicates sealant adhesion failure, modify joint preparation, primer, or both and retest until joint passes sealant adhesion test.

1.7 Qualifications

- a. Manufacturer: Company specializing in manufacturing products specified in this section with minimum ten years documented experience.
- b. Applicator Qualifications:
 - Company specializing in performing work of this section with minimum three years documented experience, minimum three successfully completed projects of similar scope and complexity, and approved by manufacturer.
 - Designate one individual as project foreman who shall be on site at all times during installation.

1.8 Mockup

- a. Install sealants in mockups specified in other sections including sealant and joint accessories to illustrate installation quality and color.
- b. Incorporate accepted mockup as part of Work.
 1. Repair sealant joint mockups used for field adhesion testing.

1.9 Delivery, Storage and Handling

- a. Accept materials on site in manufacturers unopened original packaging. Inspect for damage.
- b. Store primers and sealants in cool dry location with ambient temperature range of 60-80°F.

1.10 Environmental Requirements

- a. Do not install primers or sealants when atmospheric temperatures or joint surface temperatures are less than 40°F (4°C).

1.11 Scheduling

- a. Schedule work so waterproofing, water repellents and preservative finishes are installed after sealants, unless sealant manufacturer approves otherwise in writing.
- b. Ensure sealants are cured before covering with other materials.

1.12 Warranty

- a. Submit signed copies of the following warranties against adhesive and cohesive failure of sealant and against infiltration of water and air through sealed joint for a period of (3) years from date of completion.
 - Manufacturer's standard warranty covering sealant materials
 - Applicator's standard warranty covering workmanship

PART 2 - PRODUCTS

2.1 Manufacturers

- a. Subject to compliance with requirements, provide products indicated or comparable product from one of the following:
 - Tremco Sealant/RPM International Inc.
 - GE
 - Dow Corning
- b. Source limitations: obtain paint materials from a single source from a single manufacturer.
- c. Manufacturers designations listed on a separate color schedule are for color reference only and do not indicate prior approval.

2.2 Silicone

- a. Single Component Silicone: ASTM C 920, Type S, Grade NS, [Class 50] [Class 100/50]; Uses NT, M, G, A and O: single component, [moisture] [neutral] curing, nonstaining, nonbleeding, color as selected.

2.3 Other Sealants

- a. Latex Sealant: ASTM C 834; single component, solvent curing, nonstaining, nonbleeding, nonsagging; color as selected.

2.4 Accessories

- a. Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.
- b. Primer: Non-staining type, recommended by sealant manufacturer to suit application.
- c. Joint Backing: Round foam rod compatible with sealant; oversized 25 to 50% larger than joint width; recommended by sealant manufacturer to suit application.
- d. Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.
- e. Masking tape: Non-staining, non-absorbent tape product compatible with joint sealants and adjacent joint surfaces.

PART 3 – EXECUTION

3.1 Examination

- a. Verify substrate surfaces and joint openings are ready to receive work.
- b. Verify joint surfaces are clean and dry.
- c. Ensure concrete surfaces are fully cured.
- d. Report unsatisfactory conditions to Owner.
- e. Do not proceed until unsatisfactory conditions are corrected.

3.2 Preparation

- a. Prepare joints in accordance with ASTM C 1193 and manufacturer's instructions.

- b. Clean joint surfaces to remove dirt, dust, oils, wax, paints, and other contamination capable of affecting primer and sealant bond.
- c. Clean concrete joint surfaces to remove curing agents and form release agents.
- d. Protect elements surrounding the Work of this section from damage or disfiguration.
- e. Apply masking tape to adjacent surfaces when required to prevent damage to finishes from sealant installation.

3.3 Existing Work

- a. Mechanically remove existing sealant.
- b. Clean joint surfaces of residual sealant and other contaminants capable of affecting sealant bond to joint surface.
- c. Allow joint surfaces to dry before installing new sealants.

3.4 Sealant Installation

- a. Install primer and sealants in accordance with ASTM C1193 and manufacturer's instructions.
- b. Apply primer where required for sealant adhesion.
- c. Install sealants immediately after joint preparation.
- d. Install sealants free from air pockets, foreign embedded matter, ridges and sags.
- e. When joining silicone to polyurethane, install polyurethane sealant first.
- f. Join sealants in accordance with manufacturer's instructions.
- g. To exposed joint surfaces concave.

3.5 Manufacturer's Field Services

- a. Require sealant manufacturer's representative to be present on site to observe sealant mock up installation and issue report of observations.
- b. Conduct field pre-construction testing.

3.6 Cleaning and Protection

- a. Remove masking tape.
- b. Clean adjacent surfaces soiled by sealant installation.

3.7 Schedule – Sealant Joints

Interior Sealant Joints (Type C)

a. Applications:

1. Perimeter joints between interior wall surfaces and frames of doors, windows, louvers, etc
2. Other interior joints in vertical surfaces subject to movement for which no other sealant is specified
3. Single component sealants

Interior Sanitary Sealant Joints (Type G)

a. Applications:

1. Joints in toilet room and bathroom counter tops
2. Joints between plumbing fixtures and adjacent materials
3. Other interior joints in wet areas where needed to limit mold and mildew growth

END OF SECTION

SECTION 14002 09 01 23 – 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. This section includes surface preparation and application of paint systems on the following substrates:
 - Concrete
 - Clay masonry
 - Concrete masonry units (CMU)
 - Steel
 - Aluminum (not anodized or otherwise coated)
 - Wood
 - Gypsum board
 - Plaster

1.3 Definitions

- a. Gloss Level 1: Not more than (5) units at 60 degrees and (10) units at 85 degrees according to ASTM D523, a matte flat finish.
- b. Gloss Level 2: Not more than 10 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523, a high-side sheen flat, velvet-like finish.
- c. Gloss Level 3: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523, an eggshell finish.
- d. Gloss Level 4: 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D 523, a satin-like finish.
- e. Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D 523, a semi-gloss finish.
- f. Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D 523, a gloss finish.

1.4 Action Submittals

- a. Product Data. For each type of product, include preparation requirements and application instructions.
- b. Samples for each type of top coat product.
- c. Sample verification. For each type of paint system and in each color and gloss of top coat.
 1. Submit Samples on rigid backing, 8 inches square.
 2. Step coats on Samples to show each coat required for system.
 3. Label each coat of each Sample.
 4. Label each Sample for location and application area.
- d. Product list for each product indicated, include the following:
 1. Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules.
 2. See "Writing Guide" Article in the Evaluations in Section 099100 "Painting" for discussion of first subparagraph below.
 3. Printout of current "MPI Approved Products List" for each product category specified in Part 2, with the proposed product highlighted.
 4. VOC content.

1.5 Closeout Submittals

- a. Coating Maintenance Manual: Provide coating maintenance manual including area summary with finish schedule, area detail designating location where each product/color/finish was used, product data pages, material safety data sheets, care and cleaning instructions, touch-up procedures, and color samples of each color and finish used.

1.6 Maintenance Material Submittals

- a. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
- b. Paint: Not less than (1) gallon of each material and color applied.

1.7 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.
- b. Select one surface to represent surfaces and conditions for application of each paint system specified in Part 3.
- c. Final approval of color selections will be based on mockups.
- d. If preliminary color selections are not approved, apply additional mockups of additional colors selected by Architect at no added cost to Owner.
- e. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
- f. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.8 Delivery, Storage and Handling

- a. Delivery and Handling: Deliver products to Project site in an undamaged condition in manufacturer's original sealed containers, complete with labels and instructions for handling, storing, unpacking, protecting, and installing. Packaging shall bear the manufacturer's label with the following information:
 1. Product name and type (description).
 2. Batch date.
 3. Color number.
 4. VOC content.
 5. Environmental handling requirements.
 6. Surface preparation requirements.
 7. Application instructions.
- b. Store materials not in use in tightly covered containers in well ventilated areas with ambient temperatures continuously maintained at not less than 45F.
 1. Maintain containers in clean condition, free from foreign materials and residue.
 2. Remove rags and waste from storage areas daily.

1.9 Field Conditions

- a. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95F.

- b. Do not apply paint when relative humidity exceeds 85% at temperatures less than 5F above the dew point, or to damp or wet surfaces.
- c. Lead Paint: It is not expected that lead paint will be encountered in the Work.
- d. If suspected lead paint is encountered, do not disturb; immediately notify the Owner.
- e. Do not disturb lead paint or items suspected of containing hazardous materials except under procedures specified.
- f. Perform preparation for painting of substrates known to include lead paint in accordance with EPA Renovation, Repair and Painting Rule and additional requirements of authorities having jurisdiction.

PART 2 - PRODUCTS

2.1 Manufacturers

- a. Basis-of-Design Product: Subject to compliance with requirements, provide products indicated or comparable product from one of the following:
 - Benjamin Moore & Co.
 - Glidden Professional.
 - Pratt & Lambert
 - Sherwin Williams Co.
- b. Source limitations: obtain paint materials from a single source from a single manufacturer.
- c. Manufacturers designations listed on a separate color schedule are for color reference only and do not indicate prior approval.

2.2 Paint, General

- a. MPI Standards: Provide products that comply with MPI standards indicated and that are listed in its "MPI Approved Products List."
- b. Material Compatibility:
 1. Provide materials for use within each paint system that are 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, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.
- c. VOC Content: Products shall comply with VOC limits of authorities having jurisdiction and, for interior paints and coatings applied at Project site, the following VOC limits, exclusive of colorants added to a tint base, when calculated according to 40 CFR 59, Subpart D (EPA Method 24):
 - Flat Paints and Coatings: 50 g/L.
 - Nonflat Paints and Coatings: 150 g/L.
 - Dry-Fog Coatings: 400 g/L.
 - Primers, Sealers, and Undercoaters: 200 g/L.
 - Anticorrosive and Antirust Paints Applied to Ferrous Metals: 250 g/L.
 - Zinc-Rich Industrial Maintenance Primers: 340 g/L.
 - Pretreatment Wash Primers: 420 g/L.
 - Floor Coatings: 100 g/L.
 - Shellacs, Clear: 730 g/L.
 - Shellacs, Pigmented: 550 g/L.
- d. Low-Emitting Materials: Interior paints and coatings shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."
- e. Colors shall be as selected by Owner unless otherwise directed.

2.3 Source Quality Control

- a. Testing of Paint Materials: Owner reserves the right to invoke the following procedure.
- b. Owner will engage the services of a qualified testing agency to sample paint materials. Contractor will be notified in advance and may be present when samples are taken. If paint materials have already been delivered to Project site, samples may be taken at Project site. Samples will be identified, sealed, and certified by testing agency.
- c. Testing agency will perform tests for compliance with product requirements.
- d. Owner may direct Contractor to stop applying coatings if test results show materials being used do not comply with product requirements. Contractor shall remove non-complying paint materials from Project site, pay for testing, and repaint surfaces painted with rejected materials. Contractor will be required to remove rejected materials from previously painted surfaces if, on repainting with complying materials, the two paints are incompatible.

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. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers. Where acceptability of substrate conditions is in question, apply samples and perform in-situ testing to verify compatibility, adhesion, and film integrity of new paint application.
- b. Report in writing conditions that may affect application, appearance, or performance of paint.

3.2 Substrate Conditions

- a. Maximum moisture content of substrates, When measured with an electronic moisture meter:
 - Concrete: 12 percent.
 - Masonry (Clay and CMU): 12 percent.
 - Wood: 15 percent.
 - Gypsum Board: 12 percent.
 - Plaster: 12 percent.
- b. Gypsum board substrates; verify all finishing compound is sanded smooth.
- c. Plaster substrates; verify that plaster is fully cured.
- d. Proceed with coating application only after unsatisfactory conditions have been corrected; application of coating indicates acceptance of surfaces and conditions.

3.3 Preparation

- a. Comply with manufacturer's written instructions and recommendations in "MPI Manual" applicable to substrates indicated.
- b. 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.
- c. 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.
- e. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.
- f. Concrete Substrates: Remove release agents, curing compounds, efflorescence, and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces to be painted exceeds that permitted in manufacturer's written instructions.
- g. Concrete Floors: Remove oil, dust, grease, dirt, and other foreign materials. Comply with SSPC-SP-13/NACE 6 or ICRI 03732.
- h. Masonry Substrates: Remove efflorescence and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces or mortar joints exceed that permitted in manufacturer's written instructions.
- i. Aluminum Substrates: Remove loose surface oxidation.
- j. Wood Substrates:
 - Scrape and clean knots, and apply coat of knot sealer before applying primer.
 - Sand surfaces that will be exposed to view, and dust off.
 - Prime edges, ends, faces, undersides, and backsides of wood.
 - After priming, fill holes and imperfections in the finish surfaces with putty or plastic wood filler. Sand smooth when dried.

3.4 Application

- a. Apply paints according to manufacturer's written instructions and to recommendations in "MPI Manual."
 - Use applicators and techniques suited for paint and substrate indicated.
 - 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.
 - Paint front and backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.
 - Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
 - Primers specified in painting schedules may be omitted on items that are factory primed or factory finished if acceptable to topcoat manufacturer.
 - If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.

- b. 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.
- c. Paint portions of internal surfaces of metal ducts, without liner, behind air inlets and outlets that are visible from occupied spaces.

3.5 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.
- b. Contractor shall touch up and restore painted surfaces damaged by testing.
- c. 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.

3.6 Cleaning and Protection

- a. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
- 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 surface

3.7 Interior Painting Schedule

Concrete Substrates, Non-traffic Surfaces:

Latex System:

- a. Prime Coat: Primer sealer, latex, interior[MPI #3]: S-W Loxon Concrete & Masonry Primer Sealer, A24W8300, at 8.0 mils wet, 3.2 mils dry.

- b. Intermediate Coat: Latex, interior, matching topcoat.
- c. Topcoat: Latex, interior, eggshell (Gloss Level 3), MPI #52 X Green/#145 X-Green]: S-W ProMar 200 Zero VOC Latex Eggshell, B20-2600 Series, at 4.0 mils wet, 1.7 mils dry, per coat.
- d. Topcoat: Latex, interior, semi-gloss (Gloss Level 4), MPI #43 X-Green: S-W ProMar 200 Zero VOC Latex Semi-Gloss, B31-2600 Series, at 4.0 mils wet, 1.6 mils dry, per coat.
- e. Topcoat: Latex, interior, gloss (Gloss Level 5), MPI #54: S-W ProMar 200 Latex Gloss, B11-2200 Series, at 4.0 mils wet, 1.5 mils dry, per coat.

CMU Substrates:

Latex System:

- a. Block filler: Latex, interior/exterior, [MPI #4 X-Green]: S-W PrepRite bock filler, B25W25, at 100 to 200 SF/gal.
- b. Intermediate coat: Latex, interior matching topcoat.
- c. Topcoat: Latex, interior, eggshell (Gloss level 3), MPI #52 X-Green #145: S-W ProMar 200 zero VOC latex eggshell, B20-2600 series, at 4.0 mils wet, 1.7 mils dry, per coat.
- d. Topcoat: Latex, interior, semi-gloss (Gloss level 4), MPI #43 X-Green: S-W ProMar 200 zero VOC latex semi-gloss, B31-2600 series, at 4.0 mils wet, 1.6 mils dry, per coat.
- e. Topcoat: Latex, interior, gloss (Gloss level 5), MPI #54: S-W ProMar 200 latex gloss, B11-2200 series, at 4.0 mils wet, 1.5 mils dry, per coat.

Gypsum Wall Board Substrates:

Latex System:

- a. Prime Coat: Primer, latex, interior[, MPI #149 X-Green]: S-W ProMar 200 Zero VOC Latex Primer, B28W2600, at 4.0 mils wet, 1.5 mils dry.
- b. Intermediate coat: Latex, interior matching topcoat.

- c. Topcoat: Latex, interior, eggshell (Gloss level 3), MPI #52, X-Green: S-W ProMar 200 zero VOC latex eggshell, B20-2600 series, at 4.0 mils wet, 1.7 mils dry per coat.
- d. Topcoat: Latex interior semi-gloss (Gloss level 4), MPI #43: S-W ProMar 200 zero VOC latex semi-gloss, B31-2600 series, at 4.0 mils wet, 1.6 mils dry, per coat.
- e. Topcoat: Latex, interior gloss (Gloss level 5), MPI #54: S-W ProMar 200 Latex gloss, B11-2200 series, at 4.0 mils wet, 1.5 mils dry, per coat.

END OF SECTION 09 01 23

SECTION 15410 PLUMBING PIPING

PART 1 - GENERAL

1.0 RELATED DOCUMENTS

Provide all labor, materials, equipment and services necessary to complete all work specified and/ or required to provide a complete and fully functional drainage system, as indicated in Section I (Scope of Work) using materials and equipment that comply with reference standards design and construction, in accordance with published product information. Coordinate the features of materials and equipment so they form an integrated system with components and interconnections matched for optimum performance of specified function.

1.01 DESCRIPTION OF WORK

- A. Extent of plumbing piping work is indicated on Drawings and by the requirements of this Section including but is not limited to the following:
1. Pipe
 2. Fittings
 3. Piping Joints
 4. Sleeves for Pipes
 5. Pipe Hangers
 6. Cleanouts and Cleaning Screw Plugs
 7. Escutcheon Plates
 8. Traps
 9. Connections to Drain
 10. PVC to Cast Iron Connections
- B. The specifications and drawings require the contractor to provide all labor, materials, equipment and appliances to perform all work pertaining or incidental thereto, which is needed to complete the work shown on the drawings and called for in in the specifications.
- C. The complete systems and the work shall be so installed as to give proper service under all conditions, and shall be in accordance with the requirements of all public authorities having jurisdiction and to the complete satisfaction of the Authority. Any work shown on the drawings and not particularly described in the specifications, or vice versa or any work which may be deemed necessary to complete the contract shall be provided by the contractor as part of its contract.
- D. For purpose of clearness and legibility, plumbing drawings are essentially diagrammatic and size and location of equipment are drawn to scale wherever possible. The drawings indicate size, connections points and routes of pipe. It is not intended, however, that all

offsets, risers and drops are shown. Provide piping as required to fit structure, avoid obstruction, and retain clearances, headroom openings and passageways.

- E. Fixtures shown and described on the drawings shall be connected with waste, vent and storm drain piping in accordance with the requirements of the city of Elizabeth code, despite the omission or indication of such piping on the plans. Any questions involving the installation of such piping shall be referred to the Authority for resolution.
- F. Fixtures, piping and other plumbing items which are shown and described on the drawings and are not specifically labeled "Future" or "N.I.C." shall be provided by the Contractor. Related work necessary for the proper installation shall be performed by contractor.
- G. The plumbing Contractor shall comply with the commissioning requirements for the plumbing fixtures. Testing of the plumbing systems as required by section 15414 shall be completed prior to commencement of the commissioning process, as written tests results and sign-offs by the Authority must be submitted to the commissioning Agent prior to Starting the commissioning process.
- H. Scope of work: the plumbing and drainage work of this contract shall include but shall not be limited to the following systems, equipment and services.
 - 1. Storm Drain Piping: Complete piping systems including leaders, risers fittings, hangers and branches from roof drain connections to sewer connections in the street. (see attached Drawings)
 - 2. Sanitary Pipe Inspection: Contractor shall provide video inspections of all internal underground 4" waste pipelines. Auger cleaning shall be provided of all waste pipes that need cleaning.
 - 3. Plumbing Fixtures: Including Back Water Valve (BWV), House Trap (HT) complete with all accessories, support and carriers.
 - 4. Provide unions and stop valves at all equipment connections and where required for services, repairs and draining.
 - 5. Piping – General: Piping, piping installation or hook-up shall be a complete installation in all respects including pipe, fittings, valves, unions, traps, strainers specialties and other miscellaneous items to make piping systems and equipment operational.
 - 6. Miscellaneous Work: Included shall be all items of materials, piping, control, wiring, and other miscellaneous items not specifically shown on Contract Drawings or called for herein but which are normally furnished and required for a complete installation of this type.

7. Test: The contractor shall perform pressure, performance and operating tests and other tests as hereinafter specified, as directed by the Authority and as required by agencies having jurisdiction as specified in section 15414 "TESTS"
8. Sealing of Openings: Openings left in walls, floors, ceilings or partitions shall be sealed. Finishes shall match existing adjoining finishes in all aspects.

A. Standards listed below are references in this section.

1. American Society for Testing and Materials (ASTM)
2. American Standard Association (ASA)
3. American National Standard Institute (ANSI)
4. United States of America Standards Institute (USASI)
5. Cast Iron Soil Pipe Institute (CISPI)
6. American Water Works Association (AWWA)

B. Comply with applicable portions of the Building Code of the City of Elizabeth. Where requirements for products, material, equipment, method and other portion of the work specified herein exceed minimum requirements of City of Elizabeth Building Code, contractor shall comply with such requirements specified herein, unless specifically approved otherwise by the Authority.

C. It shall be unlawful for any person to perform the work referred to under this Plumbing and Drainage Specifications and/or shown on the Plumbing and Drainage contract Drawings unless such person is a license master plumber, partnership, corporations or other business association as permitted by the City of Elizabeth Building Code and continuing supervision of a license master plumber.

D. Where requirements for products, materials, systems, equipment , methods and other portion of the work specified herein exceed minimum requirements of regulatory agencies having jurisdiction over the construction work, contractor shall comply with such requirements specified herein, unless specifically approved otherwise by Authority.

1.02 CODES AND STANDARDS

Comply with applicable portions of the Building Code of the City of Elizabeth. Where requirements for products, materials, equipment, methods and other portions of the work specified herein exceed minimum requirements of Elizabeth Building Code, Contractor shall comply with such requirements specified herein, unless specifically approved otherwise by the Authority.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Deliver pipe material properly protected, and undamaged

- B. Properly protect all piping so as to prevent damage to the pipe or the introduction of foreign material in the pipe.
- C. For the purpose of protecting piping from pre-installation contamination, all piping shall be shipped to the job site with suitable caps, sheet metal covers or plugs. Pipe caps shall not be removed until just before installation.
- D. Examine all pipe and fittings before laying. Do not install any pipe section that is found to defective.

1.05 GUARANTEES AND WARRANTIES

- A. Contractors Guarantees: The contractor shall guarantee that all work of this contract is free from all defects, and is as specified, and that should any defects, which cannot be proven to have been caused by improper use, develop within the space of one year from the date of substantial completion of the work, such defects shall be made good by the Contractor, free of cost to owner.
- B. Manufacturer's Warranty: Hermetically sealed fittings become defective within 5 years from the date as defined in the General conditions. It shall replace free of charge, by the manufacturer.

1.06 SUBMITALS

- A. Product Data
 - 1. Clean-outs
 - 2. Escutcheons
 - 3. Pipes and fittings
 - 4. Submit for piping work.

Submit a compliance affidavit. If fittings match contract documents. Manufacturers' technical products data submission will be required if a substitution is proposed.

- B. Submit Shop Drawings for all piping and installations.
- C. Pipe Schedule: Itemize pipe and fitting materials for each specified applications.
- D. Sample: Polypropylene pipe & fittings with the required marking.
- E. Certifications

PART 2 – PRODUCTS

2.01 MATERIALS

A. Piping shall conform to the following :

1. Cast-iron Pipe

a. Bell and Spigot ends:

Evenly coated, cylindrical, smooth, free from all defects, of uniform thickness and of the weights required by the rules governing plumbing and drainage, and shall be of the grade known in commerce as “service weight”. Each length of the pipe and fitting shall be plainly marked with the manufacturer’s name or register trademark and with, letters “SW” to indicate “service weight”. The marking may be cast, stenciled, or otherwise applied on the pipe so as to be clear and legible at the time of installation. The marking shall be cast on fittings and shall be located away from the end so as not to interfere with proper joining upon installation. Cast-iron soil pipe and fittings shall comply with ASTM A74, latest edition.

b. No- Hub

Evenly coated, cylindrical, smooth, and free from all defects, of uniform thickness and of the weights required by the rules governing Plumbing and Drainage Each length of the pipe and each fitting shall be plainly marked with the manufacturer’s name or registration trademark. The marking may be cast, stenciled, or otherwise applied on the pipe, and cast on fitting so as to be clear and legible at the time of installation. Cast-iron soil pipe and fittings for hubless cast iron sanitary system shall comply with CISPI standard 301, and ASTM A888, latest edition.

B. Fittings and Joints

1. Cast-iron Hub and Spigot Piping:

a. Fittings shall be service weight pattern, evenly coated, manufactured in accordance with the current ASTM A74 and shall correspond with the pipe in all particulars.

b. Materials used for Hub and Spigot caulked joints shall be molten lead and packed.

2. Cast-iron No-hub Piping (hub less Coupling)

a. Cast iron No- hub pipe fittings shall be made up to comply with CISPI Standards 301 and pipe ASTM A888. No – hub coupling gaskets shall conform to ASTM C564. Each approved coupling shall be permanently

marked on its external surface with: manufacturer's name or trade mark, nominal pipe size, and shall meet pressure standard testing set in ASTM C1540-02.

C. Pipe Sleeves: Provide pipe sleeves of one of the following. Pipe sleeve must be appropriated type and thickness for the UL fire stopping assembly selected:

1. Sheet- Metal: Fabricated from galvanized sheet metal; round tube closed with snap lock joint, welded spiral seams, or welded longitudinal joint. Fabricated from the following gauges: 3" and smaller, 20 gage minimum; 4" to 6", 16 gage minimum; over 6", 14 gage minimum.
2. Steel- Pipe: Fabricate from Schedule 40 galvanized steel pipes; remove burrs.
3. Iron-pipe: Fabricated from cast-iron or ductile iron pipe; remove burrs.
4. Firestop penetration materials for sealing sleeves shall be listed by Underwriters' Laboratories and if not listed have MEA or OTCR approval. The materials shall be as specified in section 07270. For firestop devices with Underwriters Laboratories listing, and if not listed have MEA or OTCR approval, is permitted as an acceptable sleeve alternative to a material sleeve with fire stopping material. Cast-in place device is a one-step fire stopping process that does not require additional firestop penetration materials for sealing the sleeves. The device shall be installed where required for sleeving purposes. The cast-in place firestop device shall not be used for wall applications.
5. Materials for sealing space between each pipe and sleeve through non-fire rated exterior walls above grade shall be Non-shrinking cement. Materials for sealing space between each pipe and sleeve through non-rated interior walls shall consist of mineral wool and sealant.
6. Waterproof sleeves shall be Link-Seal Wall Sleeve as manufacture by Thunderline Corp, or MetraSeal wall sleeve by Metraflex Co.

D. Pipe escutcheons shall have inside diameter closely fitting pipe outside diameter or outside of pipe insulation where pipe is insulated. Select outside diameter of escutcheon to completely cover pipe penetration hole in floors, walls, or ceiling; and pipe sleeve extension, if any. Escutcheon plate types shall be as follows:

1. Galvanized cast-iron with set screw as manufactured by Anvil International, Fig. No. 395 or Carpenter & Paterson, Inc. Submit manufacture product technical data for approval.
2. Chrome-plated cast or sheet brass, solid or split-hinged, with brass set screws as manufactured by Kohler, Zurn or McGuire Mfg. Co. submit manufacturer's

product technical data.

3. Cast or sheet brass, solid or split-hinged, with brass set screws as manufactured by Kohler, Zurn or McGuire Mfg. Co. Submit manufacturer product technical data.

E. Drain Bibbs

1. Approved model: T & S Brass and Bronze B-703 modified with B-127 lock shield and key.

PART 3 - EXECUTION

3.01 PIPE AND FITTING SCHEDULE

- A. Storm Piping: Above Ground – Interior
 1. PVC piping and fittings
- B. Sanitary Piping, Waste and Vent: Above Ground and House Drain Lines- Interior
 1. Hubless Service Weight Cast Iron with mechanical stainless steel coupling
- C. Sanitary Piping, Waste and Vent: Underground – Interior
 1. Service Weight Cast Iron bell and spigot with lead and oakum joint.
- D. Sanitary Piping, Waste and Vent: House Sewer/Underground – Exterior

3.02 INSTALLATION

A. Piping (General)

1. The run and arrangements of all pipes shall be approximately as shown on drawings or specified and as directed during installation, and shall be as straight and direct as possible, forming right angles or parallel line with building walls and other pipes, and neatly spaced. No pipe shall be installed where the headroom will be interfered with unless the conditions are such that it is unavoidable and permission is obtained from the Authority. Offset will be permitted where walls reduce in thickness or beams interfere with direct runs; offset shall be made at an angle of 45° to the vertical; in no case shall the space between the pipes, partitions, walls, etc., exceed 5". All exposed risers shall be erected plumb, standing free, close to and parallel with walls and other pipes and uniformly spaced. All horizontal runs of piping hung from structural floor, slab or floor beams shall be erected as closely as possible to bottom of floor slabs, ceiling, or I-beams as the case may be. In no case shall the headroom, beneath the pipe, be less than (7'-10") where the pipe is.
2. Installed more than (1'-0") from wall, partition, etc., Horizontal piping shall be so

graded as to drain to the low point and water lines to drain to bibbs. All piping shall be installed with ample space for pipe covering.

3. The contractor shall disconnect the storm drain pipe from the NE drain and cap-off the sanitary sewer pipe that collects sewage waste from the toilets on the three floors of the building. The contractor shall then install a new PVC storm drain connected to the NE roof drain down to the basement, thereby isolating the storm drain from the toilets waste discharge. Contractor shall carefully remove the 6" BWV from the cast iron sewer/ storm drain pipe from the building and carefully remove the HT from the 6" pipe going to the 18" street pipe, as shown on the drawings(s).
4. Contractor shall install a ceiling mounted 4" PVC storm drain from the NE roof drain pipe, using required fittings to connect with 4" PVC leader from the SW roof storm drain. See drawing #PL-1 for details.
5. The Contractor shall now connect the two 4" PVC storm drain pipes, at the ceiling, into a new 6" PVC storm drain as shown on the drawings.
6. Roughing underground or concealed in the floor or wall construction shall be properly installed, tested and inspected before any of it is covered up. Should any work be covered up before being inspected and tested, it shall be uncovered and recovered at the expense of the Contractor. Plugged fittings shall be installed when called for. Reducer fittings shall be used in making reductions in sizes of pipes; bushing will not be allowed.
7. The following addition requirements shall be adhered to:

B. Piping (Special)

- a) The contractor shall very carefully remove the concrete partition separating the Backwater Valve (BWV) pit and the House Trap (HT) pit.
- b) The PVC piping shall run as straight as possible with fewest numbers of changes in direction, with such variations from the layout shown on the drawing as conditions at the premises may require, as approved by the Engineer at no extra cost to the County Provide piping without sharp bends, quick changes of sections, pockets or bushing.
- c) The location of all existing piping as indicated on the drawings are approximate. The contractor shall investigate and ascertain the exact location of such piping and make whatever minor variations in runs of the new piping that may be required at no extra cost to County.

- d) Contractor shall consider the locations of all equipment, ductwork, piping, electric conduits, support, steel work, etc., and all new piping shall be installed without interference therewith.
- e) Where existing branch piping interfere with installations of the new branch piping, the existing branch shall be removed and re-routed to accommodate the new work. The reroute work shall be of new material and at no additional cost to the County.
- f) All new extensions and relocations of existing piping systems shall be concealed in existing or new walls, floor, ceiling, and pipe chase or as otherwise accepted by the Engineer.
- g) Unused dead end soil, waste and vent piping shall be removed as far as each branch, main, stack, etc., and capped or plugged concealed in hung ceilings, below floors or behind walls.

2. Cast iron bell and Spigot Type

- a. Joints in Cast-iron bell and spigot piping shall be caulked joints made with packed oakum and molten lead, 12 ounces of which must be used each inch in diameter of the pipes at each joint and must be poured in at one time. The lead to be used for this purpose shall be soft "pig" or "Bar". After cooling and shrinking the lead shall be thoroughly caulked and the joints made impermeable to gases and liquids, and also are capable of withstanding the tests to be applied. The face of the lead joints shall finish flush with the face of the hub and be left without putty, paints or cement. Whenever joints are made on the floor or surface they shall be re-caulked after being placed in position.
- b. Joints in cast iron No-Hub pipe shall be heavy-duty type coupling. No-Hub cast iron pipe shall be cut square.
The use of No-Hub pipe and fittings for soil, waste, vent and storm piping is permitted when installed above ground within building.
- c. The use of No-Hub pipe and fittings is NOT PERMITTED for underground applications or when embedded in concrete.

C. The Contractor shall install a new 6" BWV, 6"HT and 6" storm drain pipe as grouped and shown on drawing # RE-2 (inset), between the building's 6' sewage and storm drain pipe. The HT shall be extra heavy pattern, manufactured in accordance with current ASTM standard specifications.

Cleanouts and Cleaning Screw Plugs

1. Install cleanouts in the following locations on all traps (except traps integral with floor drains), at the end of and at all points in change of all drain direction of all drain pipes and branches drains, at all offsets, at the end of all branch soil and waste pipe, and located in runs not more than fifty (50'-0") feet on center, and at all points to make accessible all parts of the drainage system. In underground lines the cleanouts for drain, traps, or branches shall extend up to and finish flush with finished level or made accessible with brick pits with cast iron frame and covers. Cleanouts in connection with vertical cast iron pipe above the cellar, except the traps and fittings, same size as pipe, closed with bronze screw plug. All other cleanouts in connection with cast iron pipes, traps and fittings shall have heavy full-size cast iron ferrules, same size as pipes or fitting, caulked into hub and closed with bronze screw plug.
2. Plugs used for cleanouts shall be same size as the fittings up to and including 4 inches. Sizes above 4 inches shall be reduced to allow for 4 inches cleanouts. For house traps 8 inches and larger plugs allowing for 6 inches cleanouts shall be used.
3. Provide cleanouts at the base of all soil, waste and storm water leaders, and at all changes in direction on horizontal piping.
4. The complete list of locations of access doors and frames for cleanouts located behind walls shall be furnished by the plumbing subcontractor to the prime General Contractor prior to erection of walls.
5. Cleanouts on 3 inches and larger pipes shall installed so as to allow clearance of at least 8 inches cleanouts on pipe less 3 inches shall be installed so as to allow at least 12 inches of clearance.

SLEEVE FOR PIPE

1. General: All plumbing pipe passing through floors, roofs, walls, partitions, furring, beams, trenches, and whenever else indicated on drawing shall be provided with sleeves installed and maintained by the Contractor. Core drilled holes shall be provided with sleeve.
2. For interior walls and floors and for pipes through roof, the space between each installed pipe and its sleeve sealed with a three hour rated fire stop penetration material. Fire stop shall be installed in accordance with the instructions of the manufacturer.

SHEET METAL

1. Sleeves for piping passing through floors, partition, hung or furred ceiling, shall be installed with ½ inch maximum clearance all around pipes. Each sleeve for pipe passing through an interior floor slab shall be fitted with a one-inch flange, or equivalent.

ESCUTCHEON PLATES

1. Install galvanized cast iron or brass escutcheon plates with set screw on concealed pipes passing through walls, partitions, and floor and on exposed to view piping in unfinished rooms and spaces. Material shall be appropriate for the material to prevent galvanic reaction (i.e. brass or chrome plated brass escutcheon for copper or iron).
2. Plate shall fit snugly around the pipes or insulation so escutcheon covers penetration hole, and is flush with adjoining surface.

Drain Bibbs: provide drain Bibbs in the following locations:

1. At the base of all waste risers.

House Bibbs shall be installed where indicated on the Drawings, and as follows:

1. Storm Drain Piping: complete piping system including leaders, risers, fittings, hangers and branches from roof drain connections to sewer connections in the street. (see attached drawings)
2. Sanitary Pipe Inspections: contractor shall provide video inspection of all internal underground 4 inch waste pipelines. Cleaning shall be provided of all waste pipes that need cleaning.
3. Plumbing fixtures: including back water Valve (BWV), house Trap (HT) complete with all accessories, support and carriers

END OF SECTION

SECTION 15411
HANGERS AND SUPPORTS

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

Provide all labor, material, equipment and services necessary to complete all work specified and/ or required to complete and fully functional drainage system, as indicated in Section I (Scope of Work), using materials and equipment that comply with reference standards and manufacturer's standard design and construction, in accordance with published product information. Coordinate the features of materials and equipment so they form an integrated system with components and interconnections matched for optimum performance of specified functions.

1.02 GENERAL CONDITIONS

- A. All of the Contract Documents, including Supplementary and General Requirements for Electrical Work, apply to the work of this Section.

1.03 SUMMARY

- A. This section includes the following items from a single supplier:
 - 1. Hanger, Rod, and Support
 - 2. Enclosures
 - 3. Related Accessories as specified

1.1 DESCRIPTION OF WORK

- A. Extent of hangers and support Work is indicated by the requirements of this Section.

1.02 SUBMITTALS

- A. Submit catalog cuts for each different type of hanger and rod, support and accessory.
- B. Submit method of support and hanging for Engineers approval prior to installation.
- C. Submit manufacturer technical data of insert and rod for approval.

1.03 QUALITY ASSURANCE

- A. No-Hub piping shall be installed and supported in full compliance with Local Law 100 of 1989.
- B. Cast-Iron Soil Pipe Institute (CISIP) Designation B10-1985 and Designation 301-1985.
- B. Manufacturers Standardization Society of The Valve and Fittings Industry (MSS)
Compliance:
Comply with:

MSS SP-58 Pipe Hangers and Supports - Materials, Design and Manufacture.
MSS SP-69 Pipe Hangers and Supports - Selection and Application.
MSS SP-89 Pipe Hangers and Supports - Fabrication and Installation Practices.

PART 2 – PRODUCTS

2.1 MATERIALS

- A. Pipe Hangers and Supports
 - 1. Hangers for horizontal piping (insulated and uninsulated), supported from above shall be of malleable iron, adjustable swivel ring type and shall comply with MSS SP-69 Type 6. Hangers shall be Anvil International Fig. 104 or the approved equal of Carpenter & Paterson, Inc., Hilti, Inc., or Cooper B-Line, Inc.
 - 2. Hangers for horizontal piping (insulated and uninsulated) and PVC piping larger than three inch shall be of carbon steel, adjustable clevis type and shall conform to MSS SP-69 Type 1. Hangers shall be Anvil International Fig. 260, Fig. 260 ISS or the approved equal of Carpenter & Paterson, Inc., Hilti, Inc., or Cooper B-Line, Inc.
 - 3. Hangers for uninsulated horizontal PVC piping larger than one inch shall be of carbon steel with copper finish adjustable clevis type, complying with MSS SP 69 Type 1. Hangers shall be Anvil International Fig. CT-65 or the approved equal of Carpenter & Paterson, Inc., Hilti, Inc., or Cooper B-Line, Inc.
 - 4. Supports for vertical piping and PVC piping shall be double bolt riser clamps, complying with MSS SP 69 Type 8 with each end having equal bearing on the building structure located as hereinafter specified. Supports shall be Anvil International Fig. 261 for PVC pipe and Fig. CT-121 for copper tubing or the approved equal of Carpenter & Paterson, Inc., Hilti, Inc. or Cooper B-Line, Inc. If piping is insulated, riser clamp shall be placed under insulation.

5. Storm drainage leader piping running exposed along the outside face of building wall shall be supported by offset pipe clamp of carbon steel; Anvil International Fig. 103 or the approved equal of Carpenter & Paterson, Inc., Hilti Inc. or Cooper B-Line, Inc.
6. Trapeze type hangers shall be made of 2"x2"x1/4" carbon steel angle iron with drilled holes and 1/2" hangers' rods. In lieu of an angle iron, a strut assembly may also be used for the trapeze kind of hanger support.
7. Sway bracing for horizontal No-Hub cast iron piping shall be made up of double bolt riser clamp, complying with MSS SP 69 Type 8, galvanized steel 12" long shields, conforming to MSS SP 69 Type 40, and 1" x 1/8" steel plate. Riser clamp shall be Anvil International Fig. 261 and shields shall be Anvil International Fig. 167 or the approved equal of Carpenter & Paterson, Inc., or Hilti, Inc. or Cooper B-Line, Inc.
Refer to "SWAY BRACING" Detail.
8. At all points of support, a galvanized steel shield shall be provided between the hanger and pipe insulation complying with MSS SP 69 Type 40. Shields shall be Anvil International Fig. 167, Carpenter & Paterson, Inc. Figure 265P or the approved equal of Hilti, Inc. or Cooper B-Line, Inc.

Inserts shall be "Bang-It" steel deck insert as manufactured by Powers Fasteners or HCI-MD Cast-In Anchor for Metal Deck as manufactured by Hilti, Inc.

Metal Deck ceiling bolts (T-bars), Carpenter & Paterson, Fig. 143 may be used in lieu of the above specified deck inserts with the approval of the Engineer of Record.

B Fasteners, as required, shall be as follows:

1. Lag screws or Long screws.
2. Long Expansion bolts
3. Bolts and nuts

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Supports shall be adequate to securely support the piping and its contents, to prevent vibration and to provide proper allowance for expansion and contraction of the piping.
- B. All piping running close to or on walls shall be supported by means of hanger suspended from heavy angle iron wall brackets. No wall hooks will be permitted.
- C. Hanger rods shall be of ample size to support the pipe and its contents at a minimum hanger rod size shall be the same as that recommended by the hanger manufacturer for each sized hanger. Hangers shall be recessed to approve beam clamps, steel plates or other approved devices.
- D. Where more than two pipes run parallel, the Contractor may install trapeze type hangers, constructed of 2" x 2" x 1/4" angle iron or channel strut " kindorph" and 1/2" hanger rods. Provide holes in the trapeze angle iron as required to accommodate rods for the individual supports. Burning of holes in angle supports is not acceptable. Provide individual supports for piping, where necessary to provide proper pitch. Spacing of trapeze type hangers shall be as required by the smallest size pipe/tube supported by trapeze hanger.
- E. At all points of support of insulated piping and tubing a galvanized metal shield shall be installed between the hanger and pipe insulation. The use of the galvanized metal shield shall be eliminated if the Anvil Fig 260 ISS is utilized. Installation of Anvil Fig 260 ISS: position the pipe on the saddle, notch section of the insulation to fit around the saddle, square cut the adjoining insulation section and butt the mating end to the notched section, finish taping according to standard methods, No galvanized metal shield is required.
- F. No piping shall be supported from other pipes, ductwork, and electric conduit, hung ceiling, cinder concrete or work of other trades.
- G. Overhead horizontal drains, vents, supply or other piping shall be supported by adjustable wrought iron, steel or malleable iron hangers. Double locknuts shall be installed all hangers. The metal decks shall not be used for support of piping or equipment.
- H. Intervals of supports for horizontal piping shall be as follows:
 - 1. Other Materials--As required for structural stability, service and as further stipulated in specifications and Drawings.
- I. Intervals of supports for vertical piping shall be as follows:

1. Other materials: As for structural stability and service.

J. Methods of Fastening: The following rule, except where otherwise specified, shall be observed throughout the entire work: Where fastenings are made to wood, use long screws or lag screw.

The use of wood plugs and nailing will not be permitted.

K. Cleaning, painting and installation of hangers and supports shall be done before the application of fireproofing material. All hanger and support assemblies in their entirety shall be rust proofed and painted.

3.02 NO-HUB PIPING - ADDITIONAL REQUIREMENTS

A. Sway bracing shall be provided at changes in direction greater than 45° for pipe sizes 4" and larger.

B. On horizontal piping, additional hangers shall be provided at each horizontal branch connection.

C. Horizontal piping 6" and larger shall be braced to prevent joint separation.

D. Vertical piping shall be braced at each joint to assure maintaining alignment.

E. Vertical piping shall be secured at base of stack to building structure with socket clamp and rods or trapeze hangers.

END OF SECTION

SECTION 15412 VALVES

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

- A. Extent of Valve Work is indicated on the Drawings and by the Requirements of this Section.

1.02 SUBMITTALS

- A. Product Data
 - 1. Manufacturer's product technical data for each valve
 - 2. Installation Instructions (see dwg's)
 - 3. Include list indicating valve and its application
- B. Shop Drawings indicating methods of assembly of components, and installation of Back Water Valve (BWV) and House Trap (HT) into line going to 18" street sewer pipe.

PART 2 - PRODUCTS

2.01 MATERIAL

- A. Maximum content of lead permitted in materials used in the manufacture of valves shall be 5%.
- B. All valves shall be designed for packing under pressure with valve open or closed.
- C. All gate valves shall be of the solid wedge disk type.
- D. Iron body flanged-valves, strainers and other items shall be provided with gaskets and sealing as manufactured by Garlock. All flanges shall be drilled for American Standard Association 125 pound standard.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Install Backwater Valve (BWV) and House Trap (HT) in accordance with the manufacturer's instructions. Follow valve manufacturers recommendations when brazing solder end valves. BWV shall be 6" to match existing soil pipe (see dwg's).
- B. Valves shall be installed so that they shall be readily accessible. It is brought to the Contractor's attention that all valves shall be so located that they can be easily and safely operated. If, in the opinion of the Authority, valves are so installed as to create a hazardous and unsafe condition, this Contractor shall relocate these valves as directed without additional charge.
 - 1. Valve shall be full size of pipe.
- C. Swing check valves shall be installed in horizontal position with hinge pin horizontally perpendicular to centerline of pipe
- D. All valves shall have the name or trademark of the manufacturer and guaranteed working pressure cast or stamped on the body of the valve. All flanges shall be drilled for American Standards Association 125-pound Standard. Companion flanges for all iron body gate valves, check valves, strainers, etc., shall be iron.

END OF SECTION

LIST OF SUBMITTALS

<u>SUBMITTAL</u>	<u>DATE SUBMITTED</u>	<u>DATE APPROVED</u>
Product Data:		
1. Mfgs product data	_____	_____
2. Installation Inst.	_____	_____
3. Shop Drawings	_____	_____
4. Valve List	_____	_____
Certifications:		
1. Valves meet reduction in lead act	_____	_____

* * *

SECTION 15414- TESTS

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

- A. Every new plumbing system and every part of an existing plumbing system that has been altered or repaired shall be inspected and tested. Tests shall comply with the requirements of this Section.
- B. Defects disclosed by tests shall be repaired, or, if required by the Authority, defective work shall be replaced with new work. Tests shall be repeated after defects have been repaired or replaced and shall be repeated as often as necessary until all work passes the required tests.

1.02 SUBMITTALS

- A. Certification of Tests.
- B. Notices (72 hours) prior to all tests

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Provide all materials, equipment and other items required for tests, retests, repairs and replacements that are required to complete the Work of this Section.
- B. All gauges, instruments and test devices shall be provided with a certificate of calibration and calibration curve or letter indicating that a minimum of five (5) test points have been calibrated. The certificate and letter must show the date of last calibration. The calibration date must be within a year of the testing date.

PART 3 - EXECUTION

3.01 PIPING SYSTEM TESTS - GENERAL

- A. All new piping and equipment shall be tested prior to application of insulation, painting, concealing or placing of backfill. Testing as stipulated herein shall be considered minimum, and where tests stipulated by authorities having legal jurisdiction exceed these requirements, such more stringent tests shall be performed.

- B. The work of the Contractor shall include the furnishing of all labor, testing instruments, gauges, pumps, smoke machines, and other equipment required or necessary for tests, required by law, rules, and regulations and as specified.
- C. Provide all other tests required by local inspectors and all other authorities having jurisdiction.
- D. All appurtenances shall be operated after installation to determine whether or not they meet the requirements of the Specifications.
- F. If in any tests leaks are observed, the defective work or material shall be replaced. No caulking of screwed joints or holes will be acceptable. Peening of welds is prohibited. Repetition of the entire test will be required as many times as leaks can be observed from the tests, until no leak results in successful completion of the test.
- G. All tests shall be made in the presence and to the satisfaction of a representative of the Authority, and of the Engineer, or their representatives, and the local authorities having legal jurisdiction over the work to be tested, and as may be directed; and at least 72 hours notice shall be given to all parties in advance of all tests.

3.02 NOT USED

3.03 NOT USED

3.04 NOT USED

3.05 DRAINAGE AND VENT PIPING INSIDE BUILDING

- A. Rough Plumbing: The piping of plumbing drainage and venting system shall be verified as to material and shall be tested upon completion of the rough piping installation and proven to be watertight.

The representative of the local agency having jurisdiction may require the removal of any cleanout plugs to ascertain that the prescribed pressure has been reached in all parts of the system.

1. Water Test

A water test shall be applied to the drainage system which includes soil, waste, leader and vent piping either in its entirety or in sections after rough

pipng has been installed. If applied to the entire system, all openings in the piping, except the highest opening, shall be tightly closed and the system filled with water to the point of overflow. If the system is tested in section, each opening, except the highest opening of the sections under test, shall be tightly plugged and each section filled with water. No section shall be tested with less than a 10 ft., head of water. In testing successive sections, at least the upper 10 ft., of the following section shall be tested, so that no joint or pipe in the building (except the uppermost 10 ft., of the system) shall have been submitted to a test of less than 10 ft., head of water. The water shall be kept in the system or in the portion under the test for at least 15 minutes before inspection starts; the system shall then be tight at all points.

- B. Finished Plumbing: After the plumbing fixtures have been set and their traps filled with water the entire drainage system shall be verified as to materials and shall be tested and proven gas tight by smoke test.

1. Final Drainage and vent test

A smoke test, if deemed necessary by the Plumbing Inspector, shall be performed when the visual final test of the completed drainage and vent system is not in sufficient detail to determine that testing and inspection are in compliance with the city of Elizabeth plumbing Code. When the smoke test is utilized, it shall be made by filling all traps with water and then introducing into the entire system a pungent thick smoke produced by one or more smoke machines. When the smoke appears at stack openings of the roof, these openings shall be closed and a pressure equivalent to a 1" water column shall be maintained for the period of inspection closed and a pressure equivalent to a 1" water column shall be maintained for the period of inspection.

3.06 NOT USED

3.12 NOT USED

3.13 FINAL OPERATING TEST

- A. After the completion of the entire work, the Contractor shall operate the entire installation of plumbing and drainage in the presence of the Authority's Representative and of the representatives of the manufacturers of the different apparatus and appliances installed.

3.14 NOTIFICATION OF OFFICIALS, ETC.

- A. The Contractor shall provide written notification to The DEP and all department agencies and bureaus with jurisdiction required to witness any tests falling within their jurisdiction. In addition, the manufacturers of the apparatus to be tested must have qualified representation at all tests of apparatus supplied by them.

3.15 MATERIAL AND LABOR FOR TESTS, ETC.

- A. The Contractor shall furnish all fuel, apparatus, material and labor required for preliminary and final operations, cleaning, testing and adjusting, including the necessary services of competent mechanics.

3.18 INSPECTION

- A. The Engineer reserves the right to order the Contractor to disassemble or take apart any or all material and equipment called for in order that it may be inspected to see that it has been constructed in strict accordance with the plans, specifications and details. If after inspection, it is found to fully comply, then the Contractor shall properly reassemble all such material and equipment.

Any material or equipment that does not fully comply with the requirements of the plans, details and specifications will be rejected and shall be at once removed from the premises and shall be replaced with new material and equipment that complies fully with the requirements of the plans, details and specifications.

END OF SECTION

SECTION 15415 - DRAINAGE

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

- A. Extent of Drainage Work is indicated on the Drawings and by the requirements of this Section. Coordinate with Section 15410 for piping and Division 7 for flashing work.

1.2 CODES AND STANDARDS

- A. Comply with applicable portions of the Building Code of the City of Elizabeth and with the latest standards and rules of the Department of Environmental Protection, Bureau of Sewers and Division of Drainage Basin Management.
- B. Where requirements for products, materials, systems, equipment, methods and other portion of the work specified herein exceed minimum requirements of regulatory agencies having jurisdiction over the construction work, contractor shall comply with such requirements specified herein, unless specifically approved otherwise by the Authority.

1.3 SUBMITTALS

- A. Submit shop drawings for the following:
 - 1. Floor Drains
 - 2. Back Water Valve installation
 - 3. House Trap installation
 - 4. Connections of 4" leaders to roof drain
 - 5. Connection of 6" storm drain to 6" sewer pipe
 - 6. Connection of 4" NE storm drain and 4" SW storm drain into 6" storm drain at the ceiling to the 6" PVC storm drain to the street
- B. The Contractor shall submit shop drawing for and obtain approval of each type of drain with location to be installed before delivery and installation. The shop drawings shall be marked as to type and shall include all dimensions, free area, and features as to meet the specifications.
- C. Certifications: Submit an affidavit stating that the flashing and sealing work at drains and vent stacks is acceptable and in conformance to the City of Elizabeth Building Code.
- D. Maintenance materials

- E. Manuals: Operation & maintenance manuals for the Back Water Valve and House Trap. Include in the maintenance manuals of the BWV and HT system, logs detailing chips replacement.

1.4 EXTRA MATERIALS

- A. The Contractor shall furnish the building maintenance man with spanner type tools that may be used for removal of clean-out covers, strainers and grates. Two (2) such tools shall be provided for each different type drain and clean-out covers. Tools shall match products installed and shall be packaged with protective covering for storage and identified with labels describing contents.

PART 2 - PRODUCTS

2.1 PIPING

- A. Piping, fittings and piping joints shall be as specified in Section 15410.

2.2 FLOOR DRAINS

- A. Drains shall be heavy cast iron with double drainage flange and weepholes. Type and size shall be as indicated on Drawings. Unless otherwise specified, drains shall be furnished with polished bronze tops and polished brass or bronze strainers or grates that are secured to the body with vandal proof spanner type stainless steel screws or with an alternate type of vandal proof stainless steel screws approved by the Authority. Removable sediment bucket shall be cast iron heavy duty one piece construction, as specified hereinafter. Acid drains shall be cast ferro-silicon iron and of the composition specified for silicon iron.
 - 1. Gasket-joint drains and no-hub joint coupling drains shall not be used in drainage system.
 - 2. All external floor drains located in walking surfaces, pedestrian traffic or along accessible routes shall comply with the American Disabilities Act (ADA). In order to comply with the American Disabilities Act (ADA), the grate opening shall no grater than 1/2" in one direction. If the grate openings are elongated, then the openings must be oriented so that long dimension is perpendicular to the dominant direction of travel.
- B. Types (J, K, L, M, N, O, P, S) drains shall conform to the provisions as set forth in Par. A except they shall all be cast iron lacquer finish, no polish brass tops required, except when used in finished areas.

- C. The various manufacturers figure numbers referred to are for the purpose of type only. All manufacturers shall conform to the provisions as set forth in Par. A and the specifications as listed hereinafter.
- D. Flashing material is as described in Division 7 and dependant on the type of waterproofing material.
- E. Drain Types
 - 1. Type L: (Exterior Areas, Parking Areas) shall be cast iron drainage with double drainage flange and seepage openings, bottom outlet caulk connection, heavy duty round grate and slotted sediment bucket with auxiliary drainage rim and 3/8" or 1/4" bottom seepage openings, so designed that grate cannot be set unless bucket is in position. Drain shall be furnished with vandal proof locking device consisting of angle latches, 3/8" x 7/8" minimum stainless steel locking bar drilled and tapped to receive 3/8" stainless steel screw with spanner type stainless steel cap set flush with top of grate. Under side of grate shall be provided with recess to receive a boss cast into sediment bucket or other locking device to prevent grate from turning in bucket. Drains shall be Smith Fig. 2253-U-2, Zurn Z543-81-VP, Josam 34720-Q503-X, Wade 1710-A-NY, MIFAB F1370C-Y-5-6 or Watts Drainage Products FD360-Y-SET-5-6.

2.3 TEST TEES

- A. Test tees shall be as specified in Section 15410.

PART 3 - EXECUTION

3.1 HOUSE SEWERS

- A. Unless otherwise shown on Drawings, house sewers shall be connected to either private or public sewers. All work shall be done in accordance with the latest specifications and under the direct inspection and supervision of the Division of Sewer Regulation and Control.
- B. When connections are to be made to the public sewers or to a private sewer and new spurs are indicated, a section of the sewer shall be removed and replaced with new piping and a fitting with a spur of the required size. This work shall be performed in conformity with the rules and regulations of the Division of Sewer Regulation and Control.

- C. The Authority will arrange with the owners of private sewers and drains for permission to connect thereto the house sewers or drains as indicated on drawings. The contractor will obtain and pay for all permits in connection therewith.

3.2 BUILDING SANITARY HOUSE DRAIN

- A. House drains shall be fitted with a running trap of material matching the piping having two cleanouts, placed where indicated on the Drawings and, with the exceptions noted in the Plumbing Rules, the connection for the ejector discharge shall be on the sewer side of the house trap. If the traps are below floor, the cleanouts shall be extended to bring the cleanout deckplate flush with floor where so indicated, and not higher than 18" above center line of pipe, or traps cleanouts shall be in pits, in which case the cleanout deckplates shall be flush with bottom of the pits. The house drain shall be considered to extend 5' outside the building wall.
- B. Fresh air shall be connected to a fitting in the house drain on the house side of the main house trap and extended outside of the building and shall be terminated above grade with a nickel bronze face plate having a pipe locking device and vandal proof cap.
- C. Face plates shall protrude no more than 7/8" from face of building.
- D. All sanitary drains shall have the traps installed directly below the drains without any piping between the drain and the trap.

3.3 BUILDING STORM HOUSE DRAIN

- A. Each storm house drain shall be installed where shown on the Drawings.

3.4 NOT USED

3.5 NOT USED

3.6 SOIL, WASTE AND VENT LINES

- A. Offsets in the vent portion of soil and waste stacks above the highest fixture drainage connection, and offsets in vent stacks and connections of vent stacks at the bottom to a soil or waste pipe or to the building house drain shall be made at an angle of at least 45 degrees to the horizontal.

Waste and vent stacks shall end at the same height as the parapet wall coping or roof barrier fence. Where required, to allow for the proper installation of flashing, stacks passing through roofs adjacent to parapets, bulkheads, etc., shall be offset

close to slab to a point not less than 2' -6" from parapet or inner edge of exterior wall.

- B. All soil, waste and vent pipes passing through roofs shall be flashed so as to prevent leakage and yet allow for the expansion and contraction of the pipes. Refer to Division 7 for installation of such work.

3.7 ACID WASTE SYSTEM (NOT USED)

3.8 FLOOR DRAIN (NOT USED)

3.9 ROOF DRAINS

- A. Contractor shall disconnect the NE roof drain from the existing combination storm drain/sewage drain pipe.

- 1. Cap off the now isolated sewage drain
- 2. Install a new 4" PVC storm drain pipe from the NE Roof Drain down to the basement as shown on Drawing PL-2 thereby isolating the storm drainage from the sewage drain.

- B. The Contractor shall disconnect and remove the existing 4" PVC from the SW Roof Drain down to the first floor.

- 1. Install a new 4" PVC storm drain pipe from the SW Roof Drain to the basement as shown on Drawing PL-2.

- C. The Contractor shall install a new ceiling mounted 4" PVC storm drain pipe from the leader of the NE Roof Drain in the Motor Room to the 4" PVC leader from the SW Roof Drain. The tie-in of the two (2) 4" PVC storm drain pipe at ceiling level into a 6" PVC SD pipe that goes to the 18" sewer pipe in the street as shown on Drawing PL-2 and in Detail "A" on Drawing RE-2.

3.11 PROTECTION

- A. All open ends of pipes shall be temporarily capped or closed by a proper fitting, to prevent obstruction and damage, until piping is approved and ready for service.

3.12 PIPING SYSTEM TRANSITIONS

- A. When a transition is required from one piping system to another, an approved transition coupling shall be used.

- B. When connecting No-hub to a bell & spigot fitting of cast iron piping system, an approved transition coupling shall be used. When it is necessary to cut a new fitting into an existing bell & spigot cast iron piping system, a section of the hubed cast iron piping shall be removed to allow a three piece fold-in installation of new bell & spigot cast iron piping with lead and oakum joints. The use of No-hub shall not be permitted within a bell & spigot cast iron piping system.

3.13 NO-HUB PIPING -ADDITIONAL REQUIREMENTS

- A. No-Hub piping suspended in excess of 18" below structure shall be provided with sway bracing to prevent horizontal movement.
- B. Horizontal piping shall be installed with additional hangers at each horizontal branch connection.
- C. Horizontal piping 6" and larger shall be braced to prevent joint separation.
- D. Vertical piping shall be braced at each joint to assure maintaining alignment.
- E. Vertical piping shall be secured at base of stack to building structure with socket clamp and rods or trapeze hangers.

END OF SECTION

SECTION 15431 TAGS, CHARTS, AND IDENTIFICATION

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

A. Work of this Section includes the following:

1. Tags
2. Accessories
3. Charts and Frames
4. Pipeline Identification

1.02 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Shop Drawing:

1. Provide list of identification wording, symbols, letter size, and color coding.
2. Valve numbering scheme; valve Schedules: For each piping system to be included in maintenance manuals.

C. Samples: Submit samples of tags and identification markers for each different type of service. Samples shall be submitted and approved before installation.

PART 2 - PRODUCTS

2.01 TAGS

- A. All controlling valves on hot water, circulation, cold water and gas supply pipes throughout the building, except those at fixtures, shall be furnished with heavy brass tags 2" in diameter, with numbers and the words "Hot" "Circ." "Cold" or "Gas" thereon. The numbers and letters shall be of the block type, indented and filled with durable black compound. The letters shall be 1/4" high and the numbers shall be 1/2" high. The tags on circulation (Circ) pipe valves shall be numbered the same as the hot water valve controlling the riser or branch to which the circulation pipe is connected.

- B. Tags shall be as manufactured by Seton Nameplate Corp., **Brimar Industries, Inc., Marking Services Inc.,** EMED Co., Inc.

2.02 CHARTS AND FRAMES

- A. The numbers on valves for hot, circ., cold and gas shall be arranged in the following manner:

In cellar or basement commencing with	No. 1
In the first story commencing with	No. 100
In the second story commencing with	No. 200

- B. If it should occur that the number of valves on any floor exceed the number of tags provided for said floor, then a letter must be added which would read, for example 100A or 100B, and so on, until all valves on the floor are properly numbered, but in no case shall a number be applied other than as herein stated.
- C. The number of each and every valve throughout the building shall be plainly typed on approved heavy paper. Opposite each number shall be set the location of the valve bearing that number, also the fixture or fixtures controlled by that valve. The charts shall be framed in an approved glazed frame. The frames shall be made of 1" wide oak picture molding with wood back, and shall be finished with natural color varnish with screw-eyes and wire for hanging same, and shall be submitted to the Authority for approval before installation.

2.03 PIPELINE IDENTIFICATION

- A. Identification shall be in accordance with "Scheme for Identification of Piping System ANSI A13.1" and OSHA safety color regulation.
- B. Markers shall be snap-on type as manufactured by Seton Nameplate Corp., (Setmark System) EMED Co., Inc., **Brimar Industries, Inc., Marking Services Inc.** Markers shall completely encircle the pipe with a substantial overlap. No adhesive shall be used. They shall be manufactured of U.L. approved, self-extinguishing plastic. When the pipe including insulation (if any) is 6" diameter and larger, markers shall be strap on type.
- C. Provide identification for piping, and equipment.
- D. Pipe shall be lettered in accordance with the schedule below. Lettering shall be located at the supply side of each valve and branch connection and at intervals of not over 20'(10' on fire lines and gas lines in the basement and cellar) on straight runs of pipe. Provide flow arrows for all piping at each marker.

Adjacent to the legend, stencil the size of the pipe. Background and letter colors are as follows: Yellow with black letters, green with white letters, blue with white letters and red with white letters.

STENCIL SCHEDULE

<u>Service</u>	<u>Stencil Designation</u>	<u>Background Color</u>
Cold Water	Cold Water	Green
Cold Water Make-up	Cold Water Make-up	Green
Hot Water	Hot Water 105 ⁰ F.	Yellow
Hot Water (Kitchen)	Hot Water 140 ⁰ F.	Yellow
Hot Water Circulating	Hot Water Cir. 105 ⁰ F	Yellow
Hot Water Circulation (Kitchen)	Hot Water Cir. 140 ⁰ F.	Yellow
Sanitary Sewer	San. Sewer	Green
Storm Sewer	Storm Sewer	Green
Combined Sewer	Comb. Sewer	Green
Storm Water Piping	St. W.	Green
Soil Piping	Soil	Green
Waste Piping	Waste	Green
Vent Piping	Vent	Green

- E. The nature of service of all machinery, equipment, tanks, pumps, and other apparatus shall be stenciled in 2" high letters unless otherwise directed.

2.04 ACCESSORIES

- A. Accessories for attaching tags to their respective hot, circ., cold, and gas valves shall include solid brass jack chain with adjustable open and close links and solid brass S-Hooks.
- B. Jack chains and S-hooks shall be as manufactured by Seton Nameplate Corp., EMED Co., Inc., **Brimar Industries, Inc., Marking Services Inc.**

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Attach solid brass tags to their respective hot, circ., cold and gas valves with jack chain and S-Hooks.
- C. Hang the charts and frames where directed, as follows:
 - 1. One (1) in Boiler Room or Mechanical Room
 - 2. One (1) in Custodian's Office
 - 3. One (1) on each floor

END OF SECTION

SECTION 15890 - HVAC AIR-DISTRIBUTION SYSTEM CLEANING

PART 1 - GENERAL

1.1 - SUMMARY

- A. Section includes cleaning HVAC air-distribution equipment, ducts, plenums, and system components.

1.2 - QUALITY ASSURANCE

- A. UL Compliance: Comply with UL 181 and UL 181A for fibrous-glass ducts.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

1.2 PREPARATION

- A. Use the existing service openings, as required for proper cleaning, at various points of the HVAC system for physical and mechanical entry and for inspection.
- B. Comply with NADCA ACR 2006, "Guidelines for Constructing Service Openings in HVAC Systems" Section.

1.3 CLEANING

- A. Comply with NADCA ACR 2006.
- B. Remove visible surface contaminants and deposits from within the HVAC system.
- C. Systems and Components to Be Cleaned:
 - 1. Air devices for supply and return air.
 - 2. Air-terminal units.
 - 3. Ductwork:
 - a. Supply-air ducts, including turning vanes **and reheat coils**, to the air-handling unit.
 - b. Return-air ducts to the air-handling unit.
 - c. Exhaust-air ducts.

4. Air-Handling Units:
 - a. Interior surfaces of the unit casing.
 - b. Coil surfaces compartment.
 - c. Condensate drain pans.
 - d. Fans, fan blades, and fan housings.
 5. Filters and filter housings.
- D. Collect debris removed during cleaning. Ensure that debris is not dispersed outside the HVAC system during the cleaning process.
- E. Particulate Collection:
1. For particulate collection equipment, include adequate filtration to contain debris removed. Locate equipment downwind and away from all air intakes and other points of entry into the building.
 2. HEPA filtration with 99.97 percent collection efficiency for particles sized 0.3 micrometer or larger shall be used where the particulate collection equipment is exhausting inside the building.
- F. Control odors and mist vapors during the cleaning and restoration process.
- G. Mark the position of manual volume dampers and air-directional mechanical devices inside the system prior to cleaning. Restore them to their marked position on completion of cleaning.
- H. System components shall be cleaned so that all HVAC system components are visibly clean. On completion, all components must be returned to those settings recorded just prior to cleaning operations.
- I. Clean all air-distribution devices, registers, grilles, and diffusers.
- J. Clean visible surface contamination deposits according to NADCA ACR 2006 and the following:
1. Clean air-handling units, airstream surfaces, components, condensate collectors, and drains.
 2. Ensure that a suitable operative drainage system is in place prior to beginning wash-down procedures.

3. Clean evaporator coils, reheat coils, and other airstream components.
- K. Duct Systems:
1. Create service openings in the HVAC system as necessary to accommodate cleaning.
 2. Mechanically clean duct systems specified to remove all visible contaminants so that the systems are capable of passing the HVAC System Cleanliness Tests (see NADCA ACR 2006).
- L. Debris removed from the HVAC system shall be disposed of according to applicable Federal, state, and local requirements.
- M. Mechanical Cleaning Methodology:
1. Source-Removal Cleaning Methods: The HVAC system shall be cleaned using source-removal mechanical cleaning methods designed to extract contaminants from within the HVAC system and to safely remove these contaminants from the facility. No cleaning method, or combination of methods, shall be used that could potentially damage components of the HVAC system or negatively alter the integrity of the system.
 - a. Use continuously operating vacuum-collection devices to keep each section being cleaned under negative pressure.
 - b. Cleaning methods that require mechanical agitation devices to dislodge debris that is adhered to interior surfaces of HVAC system components shall be equipped to safely remove these devices. Cleaning methods shall not damage the integrity of HVAC system components or damage porous surface materials such as duct and plenum liners.
 2. Cleaning Mineral-Fiber Insulation Components:
 - a. Fibrous-glass thermal or acoustical insulation elements present in equipment or ductwork shall be thoroughly cleaned with HEPA vacuuming equipment while the HVAC system is under constant negative pressure and shall not be permitted to get wet according to NADCA ACR 2006.
 - b. Cleaning methods used shall not cause damage to fibrous-glass components and will render the system capable of passing the HVAC System Cleanliness Tests (see NADCA ACR 2006).
 - c. Fibrous materials that become wet shall be discarded and replaced.

- N. Coil Cleaning:
1. Measure static-pressure differential across each coil.
 2. See NADCA ACR 2006, "Coil Surface Cleaning" Section. Type 1, or Type 1 and Type 2, cleaning methods shall be used to render the coil visibly clean and capable of passing Coil Cleaning Verification (see applicable NADCA ACR 2006).
 3. Coil drain pans shall be subject to NADCA ACR 2006, "Non-Porous Surfaces Cleaning Verification." Ensure that condensate drain pans are operational.
 4. Electric-resistance coils shall be de-energized, locked out, and tagged before cleaning.
 5. Cleaning methods shall not cause any appreciable damage to, cause displacement of, inhibit heat transfer, or cause erosion of the coil surface or fins, and shall comply with coil manufacturer's written recommendations when available.
 6. Rinse thoroughly with clean water to remove any latent residues.

3.3 - RESTORATION

- A. Restore and repair HVAC air-distribution equipment, ducts, plenums, and components according to NADCA ACR 2006, "Restoration and Repair of Mechanical Systems" Section.
- B. Comply with Division 15 Sections "Metal Ducts" and "Duct Accessories" for duct materials, accessories, and hardware required for Work of this Section.
- C. Ensure that closures do not hinder or alter airflow.
- D. New closure materials, including insulation, shall match opened materials and shall have removable closure panels fitted with gaskets and fasteners.
- E. Reseal fibrous-glass ducts. Comply with requirements in Division 15 Section "Nonmetal Ducts."

END OF SECTION

SECTION 16010 ELECTRICAL WORK

PART 1 - GENERAL

1.01 SCOPE OF WORK

- A. Provide labor, materials, tools, machinery, equipment, and services necessary to complete the Electrical Work under this Contract. All systems and equipment shall be complete in every aspect and all items of material, equipment and labor shall be provided for a fully operational system and ready for use. Coordinate the work with the work of the other trades in order to resolve all conflicts without impeding the job progress.
- B. When an item of equipment is indicated on a floor plan and not shown on associated riser diagram or vice-versa, the Contractor shall provide said item and all required conduit and wiring connections for a complete system as part of the Contract.

1.02 EXAMINATION OF SITE

- A. The Contractor shall be held to have examined the site and to have compared it with the Drawings and Specifications, and deemed to have been satisfied as to the conditions existing at the site, as relating to the actual conditions of the site at the time estimating the Work, the storage and handling of materials, and all other matters as may be incidental to the Work under the Contract, before bidding, and no allowance will subsequently be made to the Contractor by reason of any error due to the Contractor's neglect to comply with the requirements of this clause.

1.03 RELATED DOCUMENTS

- A. Drawings and General Provisions of the Contract.
- B. Division 1 - General and Supplementary Requirements.

1.04 ELECTRICAL EQUIPMENT

- A. All electrical equipment shall be the latest of the current year in design, material and workmanship, and shall be the type or model called for in these Specifications.
- B. If the type or model specified has been superseded by a later type or model, the latest shall be submitted for approval and shall be provided as part of the Contract.

1.05 SUBMITTALS

Provide as outlined in each individual section of these Specifications, including but not limited to:

A. Product Data

Submit manufacturer's product data for equipment including capacity, performance charts, test data, materials, dimensions, weights, and installation instructions.

B. Shop Drawings

Submit manufacture's shop drawings indicating dimensions, weight loading, required clearances, location, and method of assembly of components. Submittals are mandatory as noted in the respective specifications. Schedules, installation instructions, startup manuals, operation and maintenance manuals, and shop drawings are always required to be submitted.

C. Special Warranty

D. Quality Assurance submittals

E. Operation and Maintenance Manuals

1.06 COORDINATION DRAWINGS

A. Provide coordination drawings. Coordination drawings shall be completed so as not to delay the progress of the Project.

1.07 BUREAU OF ELECTRICAL CONTROL

A. Drawings and Specifications:

1. The Contract Drawings and Specifications shall be submitted by the Contractor to the Bureau of Electrical Control to facilitate any inspections that may be made by that agency.

2. It is the intent of these Specifications that all electric work shall be done in strict accordance with the rules of the Bureau of Electrical Control, and with the Amendments to the 1999 National Electrical Code together with NFPA's 1999 National Electrical Code. Where the requirement of the Drawings or Specifications exceeds the requirements of the Electrical Code, the requirements of the Drawings and Specifications shall be binding upon the Contractor.

3. Should the Bureau of Electrical Control inspect the work and issue a violation, the Contractor shall correct the Work and eliminate the violation as part of the Contract.

B. Interpretation

1. The electric work detailed in these Specifications and shown on Drawings shall be under the jurisdiction of the Authority, subject to the approval of the Bureau of Electric Control.
2. The Authority shall be the sole source for interpretation of the Contract Documents. Any discrepancies or conflicts shall be brought to the attention of the Authority for clarification.

C. Materials and Appliance:

1. All materials and appliance shall be approved by the Authority's Representative and installed in accordance with the rules and regulations of the Building Department, Bureau of Electrical Control; certificates of approval including the temporary light and power wiring, shall be obtained by the Contractor and delivered to the Authority's Representative before the Work is finally accepted.

1.08 WORK IN EXISTING BUILDINGS

- A. The Contractor is referred to Section 01900 on General Requirements of Work in Existing Structures which shall apply to the Work of this Contract.
- B. Refer to Section 01900 on the "Ownership of Removed Materials." Generally that article shall apply except for those items which are listed here in for delivery to the Union County Board of Elections 271 N Broad St. Elizabeth, NJ All other existing material, fixtures, and equipment which have been removed shall not be used again unless specifically required by the Drawings or Specifications.
- C. Removals, Replacements, Adjustments
 1. The Contractor shall remove, relocate, replace, adjust or adapt, all existing conduit, wiring and other electric equipment or apparatus, as required, to provide a complete installation.
 2. The Work shall include, providing all materials, all necessary extensions, connections, cuttings, repairing, adapting and other Work incidental thereto, together with such temporary connections as may be required to maintain service pending the completion of the permanent Work. All

Work shall be left in good working order and in a condition equal to the adjacent new or existing Work.

D. Care in Removing Existing Conductors

1. The Contractor shall use due care and diligence in removing existing conductors from existing conduits in order to prevent conductors from breaking and becoming an irretrievable obstruction within the conduits.

E. Cutting and Repairing

1. Whenever the cutting, or drilling, or removal of any part of the structure (ceilings, walls, floors, shelving, bookcases, partitions, etc.), is required in order to remove, relocate, alter or install any article of electrical equipment (including conduits, boxes, fittings, etc.), the Contractor shall perform all cutting, drilling, etc., and remove the section of structure required. After removal and installation of the electric equipment, the Contractor shall repair the section of structure, as directed by the Authority's Representative, with new materials, equal to that of adjacent structure of the same type.

Note that in general, all holes through existing structures for conduit installation shall be core drilled, unless prior written approval is provided by the Authority.

2. Whenever holes are cut in fire-rated walls or floor slabs in order to permit the installation of conduit or electrical equipment, these holes shall be repaired with material that will restore the fire rating of the wall or floor slab to its original condition.
3. The Contractor shall paint all repaired areas of the building. The paint shall match the paint of adjacent surface areas, or extend to the nearest architectural break-line, as directed.
4. Wherever any part of the structure is marred or damaged, the Contractor shall repair the damaged or marred areas of the structure.
5. Where a piece of electrical equipment is removed, the Contractor shall finish that part of the surface to match surroundings.

F. Damaged Apparatus

Should any damage, due to the execution of this Contract, occur to the furniture, fixtures, or any equipment or apparatus, such damage shall be properly repaired and/or replaced by the Contractor without charge.

G. Non-Interruption of Services

1. **It is imperative that all existing services (electric, light, power, fire alarm, telecommunications, etc.) be kept in operation at all times, unless prior written approval is received from the Authority.**
2. Provide fire watch services, as necessary, during disruption of fire alarm system.

1.09 TESTS

- A. The Contractor shall demonstrate to the Authority operation of all equipment and systems. All tests shall be completed to the satisfaction of the Authority. Each test shall be performed as indicated in the individual specification section.

1.10 GUARANTEES, WARRANTIES, BONDS, AND MAINTENANCE CONTROL

- A. Refer to individual equipment specifications for warranty requirements.
1. Compile and assemble the warranties specified for Electrical work into a separated set of documents, tabulated and indexed for easy reference.
 2. Provide complete warranty information for each item to include product or equipment including duration of warranty or bond; and names, addresses, and telephone numbers and procedures for filing a claim and obtaining warranty services.
 3. Warranties for the equipment, workmanship and materials should be provided for the period of one year
 4. Manufacturers', in addition to Contractors' warranties, shall be provided for all Electrical equipment and accessories.
 5. All warranties are to start from the date of Substantial Completion.

1.12 CLEANING

- A. On completion of installation, inspect interior and exterior of installed equipment. Remove paint splatters and other spots. Vacuum dirt and debris; do not use compressed air to assist in cleaning. Repair exposed surfaces to match original finish.

END OF SECTION

SECTION 16020 – TEMPORARY LIGHT AND POWER

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Section S01500 of the Division 1 General Requirements entitled: "Temporary Facilities and Controls." Article 1.05 entitled: "Temporary Lighting and Electric Service."

1.2 SCOPE OF WORK

1. The Contractor shall provide labor and materials required for the installation and maintenance of temporary lighting and required power sources.
2. An independent temporary light service with separate meter connection shall be provided by the Contractor for the Authority's Field Office. The wiring and connections shall be installed immediately on arrival at the site of the Field Office. The separate metering requirement will be waived if main temporary service is available when the Authority Field Office arrives.
3. Where temporary light and power is approved and taken from the main electrical power of an existing building, the cost of the current or power so used shall be borne by the Contractor.

1.3 MINIMUM ILLUMINATION

- A. The minimum illumination permitted at any time, anywhere within and outside of the Building, shall not be less than the requirements of the Labor Law Dept. of Labor, State of N.J. or OSHA or any other agency having jurisdiction, but in no case less than 20 FC average and no less than 2 FC at any point.
- B. The minimum lighting requirement anywhere about the site shall be 2 FC average and 0.5 FC minimum at any point.
- C. If the Authority's Representative decides that the temporary illumination within the building, or on adjacent site is unsatisfactory, the Contractor shall:
 1. Provide additional lighting units in designated areas.
 2. Increase the number of lighting units in simultaneous operation.

1.4 TEMPORARY ON SITE GENERATOR

- A. It is the intent of this Specification to provide a temporary on site exterior security lighting system for prevention of vandalism and thefts during the course of construction.
- B. The security lighting system must be completely installed and operating at the earliest possible date as directed by the Authority.
- C. A plan detailing the layout of all trailers and the site lighting shall be provided along with the Temporary Lighting Submittal.
- D. Minimum lighting shall be 2 FC average and 0.5 FC minimum at any point.

END OF SECTION

SECTION 16075 ELECTRICAL IDENTIFICATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Specifications, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Identification for raceway.
 - 2. Identification for conductors and control cable.
 - 3. Underground-line warning tape.
 - 4. Warning labels and signs.
 - 5. Instruction signs.
 - 6. Equipment identification labels.
 - 7. Miscellaneous identification.

1.3 SUBMITTALS

- A. Product Data: For each electrical identification product indicated.
- B. Identification Schedule: An index of nomenclature of electrical equipment and system components used in identification signs and labels.
- C. Samples: For each type of label and sign to illustrate size, colors, lettering style, mounting provisions, and graphic features of identification products.

1.4 QUALITY ASSURANCE

- A. Comply with ANSI A13.1 and ANSI C2.
- B. Comply with NFPA 70.
- C. Comply with 29 CFR 1910.145.

1.5 COORDINATION

- A. Coordinate identification names, abbreviations, colors, and other features with requirements in the Contract Documents, Shop Drawings, manufacturer's wiring diagrams, and the Operation and Maintenance Manual, and with those required by codes, standards, and 29 CFR 1910.145. Use consistent designations throughout Project.
- B. Coordinate installation of identifying devices with completion of covering and painting of surfaces where devices are to be applied.
- C. Coordinate installation of identifying devices with location of access panels and doors.
- D. Install identifying devices before installing ceilings and similar concealment.

PART 2 - PRODUCTS

2.1 RACEWAY AND METAL-CLAD CABLE IDENTIFICATION MATERIALS

- A. Comply with ANSI A13.1 for minimum size of letters for legend and for minimum length of color field for each raceway and cable size.
- B. Color for Printed Legend:
 - 1. Power Circuits: Black letters on an orange field.
 - 2. Legend: Indicate system or service and voltage.
- C. Self-Adhesive Vinyl Labels: Preprinted, flexible label laminated with a clear, weather and chemical resistant coating and matching wraparound adhesive tape for securing ends of legend label.
- D. Snap-Around Labels: Slit, pre-tensioned, flexible, pre-printed, color-coded acrylic sleeves, with diameter sized to suit diameter of raceway or cable it identifies, and to stay in place by gripping action.
- E. Snap-Around, Color-Coding Bands: Slit, pre-tensioned, flexible, solid-colored acrylic sleeves, 2 inches long, with diameter sized to suit diameter of raceway or cable it identifies and to stay in place by gripping action.
- F. Self-Adhesive Vinyl Tape: Colored, heavy duty, waterproof, fade resistant; 2 inches wide; compounded for outdoor use.

2.2 CONDUCTOR AND CONTROL CABLE IDENTIFICATION MATERIALS

- A. Color Coding Conductor Tape: Colored, self-adhesive vinyl tapes not less than 3 mils thick by 1 to 2 inches wide.
- B. Marker Tapes: Vinyl or vinyl-cloth, self-adhesive wraparound type, with circuit identification legend machine printed by thermal transfer or equivalent process.
- C. Aluminum Wraparound Marker Labels: Cut from 0.014-inch thick aluminum sheet, with stamped, embossed, or scribed legend, and fitted with tabs and matching slots for permanently securing around wire or cable jacket or around groups of conductors.
- D. Metal Tags: Brass or aluminum, 2 by 2 by 0.05 inch, with stamped legend, punched for use with self-locking nylon tie fastener.
- E. Write-On Tags: Polyester tag, 0.015 inch thick, with corrosion-resistant grommet and polyester or nylon tie for attachment to conductor or cable.
 - 1. Marker for Tags: Permanent, waterproof, black ink marker recommended by tag manufacturer.

2.3 UNDERGROUND LINE WARNING TAPE

- A. Description: Permanent, bright colored, continuous printed, polyethylene tape.
 - 1. Not less than 6 inches wide by 4 mils thick.
 - 2. Compounded for permanent direct burial service.
 - 3. Embedded continuous metallic strip or core.
 - 4. Printed legend shall indicate type of underground line.

2.4 WARNING LABELS AND SIGNS

- A. Comply with NFPA 70 and 29 CFR 1910.145.
- B. Self-Adhesive Warning Labels: Factory printed, multicolor, pressure-sensitive adhesive labels, configured for display on front cover, door, or other access to equipment, unless otherwise indicated.
- C. Baked Enamel Warning Signs: Preprinted aluminum signs, punched or drilled for fasteners, with colors, legend, and size required for application. 1/4-inch grommets in corners for mounting. Nominal size, 7 by 10 inches.
- D. Metal Backed, Butyrate Warning Signs: Weather-resistant, nonfading, preprinted, cellulose-acetate butyrate signs with 0.0396-inch galvanized-steel backing; and with

colors, legend, and size required for the application, with 1/4-inch grommets in corners for mounting. Nominal size, 10 by 14 inches.

- E. Warning label and sign shall include, but are not limited to, the following legends:
1. Multiple Power Source Warning: "DANGER - ELECTRICAL SHOCK HAZARD - EQUIPMENT HAS MULTIPLE POWER SOURCES."
 2. Workspace Clearance Warning: "WARNING - OSHA REGULATION - AREA IN FRONT OF ELECTRICAL EQUIPMENT MUST BE KEPT CLEAR FOR 36 INCHES."

2.5 INSTRUCTION SIGNS

- A. Engraved, laminated acrylic or melamine plastic, minimum 1/16 inch thick for signs up to 20 sq. in. and 1/8 inch thick for larger sizes.
1. Engraved legend with white letters on black face.
 2. Punched or drilled for mechanical fasteners.
 3. Framed with mitered acrylic molding and arranged for attachment at applicable equipment.

2.6 EQUIPMENT IDENTIFICATION LABELS

- A. Adhesive Film Label: Machine printed, in black, by thermal transfer or equivalent process. Minimum letter height shall be 3/8 inch.
- B. Adhesive Film Label with Clear Protective Overlay: Machine printed, in black, by thermal transfer or equivalent process. Minimum letter height shall be 3/8 inch. Overlay shall provide a weatherproof and ultraviolet-resistant seal for label.
- C. Self-Adhesive, Engraved, Laminated Acrylic or Melamine Label: Adhesive backed, with white letters on a dark-gray background. Minimum letter height shall be 3/8 inch.
- D. Engraved, Laminated Acrylic or Melamine Label: Punched or drilled for screw mounting. White letters on a dark-gray background. Minimum letter height shall be 3/8 inch.
- E. Stenciled Legend: In nonfading, waterproof, black ink or paint. Minimum letter height shall be 1 inch.

2.7 MISCELLANEOUS IDENTIFICATION PRODUCTS

- A. Cable Ties: Fungus-inert, self-extinguishing, 1-piece, self-locking, Type 6/6 nylon cable ties.

1. Minimum Width: 3/16 inch.
 2. Tensile Strength: 50 lb., minimum.
 3. Temperature Range: Minus 40 to plus 185 deg. F.
 4. Color: Black, except where used for color coding.
- B. Fasteners for Labels and Signs: Self-tapping, stainless steel screws or stainless steel machine screws with nuts and flat and lock washers.

PART 3 - EXECUTION

3.1 APPLICATION

- A. Accessible Raceways and Metal Clad Cables, 600 V or Less for Service Feeder, and Branch Circuits More Than 20A: Identify with orange self-adhesive vinyl label or self-adhesive vinyl tape applied in bands.
- B. Accessible Raceways and Cables of Auxiliary Systems: Identify the following systems with color coded, self- adhesive vinyl tape applied in bands:
1. Control Wiring: Green and red.
- C. Power Circuit Conductor Identification: For conductors No. 1/0 AWG and larger in vaults, pull and junction boxes, manholes, and handholes use color-coding conductor tape or metal tags. Identify source and circuit number of each set of conductors. For single conductor cables, identify phase in addition to the above.
- D. Branch Circuit Conductor Identification: Where there are conductors for more than three branch circuits in same junction or pull box, use color-coding conductor tape or metal tags. Identify each ungrounded conductor according to source and circuit number.
- E. Conductors to Be Extended in the Future: Attach marker tape to conductors and list source and circuit number.
- F. Auxiliary Electrical Systems Conductor Identification: Identify field installed alarm, control, signal connections.
1. Identify conductors, cables, and terminals in enclosures and at junctions, terminals, and pull points. Identify by system and circuit designation.
 2. Use system of marker tape designations that is uniform and consistent with system used by manufacturer for factory installed connections.
 3. Coordinate identification with Project Drawings, manufacturer's wiring diagrams, and Operation and Maintenance Manual.

- G. Locations of Underground Lines: Identify with underground line warning tape for power, lighting, communication, and control wiring. Install underground-line warning tape for both direct buried cables and cables in raceway.
- H. Warning Labels for Indoor Cabinets, Boxes, and Enclosures for Power and Lighting: Comply with 29 CFR 1910.145 and apply self-adhesive warning labels or baked enamel warning signs. Identify system voltage with black letters on an orange background. Apply to exterior of door, cover, or other access.
 - 1. Equipment with Multiple Power or Control Sources: Apply to door or cover of equipment including, but not limited to, the following:
 - a. Power transfer switches.
 - b. Controls with external control power connections.
 - 2. Equipment Requiring Workspace Clearance According to NFPA 70: Unless otherwise indicated, apply to door or cover of equipment but not on flush panelboards and similar equipment in finished spaces.
- I. Instruction Signs:
 - 1. Operating Instructions: Install instruction signs to facilitate proper operation and maintenance of electrical systems and items to which they connect. Install instruction signs with approved legend where instructions are needed for system or equipment operation.
 - 2. Emergency Operating Instructions: Install instruction signs with white legend on a red background with minimum 3/8-inch high letters for emergency instructions at equipment used for power transfer.
- J. Equipment Identification Labels: On each unit of equipment, install unique designation label that is consistent with wiring diagrams, schedules, and Operation and Maintenance Manual. Apply labels to disconnect switches and protection equipment, central or master units, control panels, control stations, terminal cabinets, and racks of each system. Systems include power, lighting, control, communication, signal, monitoring, and alarm systems unless equipment is provided with its own identification.
 - 1. Labeling Instructions:
 - a. Indoor Equipment: Self-adhesive, engraved, laminated acrylic or melamine label. Unless otherwise indicated, provide a single line of text with 1/2-inch high letters on 1-1/2-inch high label; where 2 lines of text are required, use labels 2 inches high.
 - b. Outdoor Equipment: Engraved, laminated acrylic or melamine label with Stenciled legend 4 inches high.
 - c. Elevated Components: Increase sizes of labels and letters to those appropriate for viewing from the floor.

2. Equipment to be Labeled:
 - a. Panelboards, electrical cabinets, and enclosures.
 - b. Access doors and panels for concealed electrical items.
 - c. Electrical switchboards.

3.2 INSTALLATION

- A. Verify identity of each item before installing identification products.
- B. Location: Install identification materials and devices at locations for most convenient viewing without interference with operation and maintenance of equipment.
- C. Apply identification devices to surfaces that require finish after completing finish work.
- D. Self-Adhesive Identification Products: Clean surfaces before application, using materials and methods recommended by manufacturer of identification device.
- E. Attach non-adhesive signs and plastic labels with screws and auxiliary hardware appropriate to the location and substrate.
- F. System Identification Color Banding for Raceways and Cables: Each color band shall completely encircle cable or conduit. Place adjacent bands of two-color markings in contact, side by side. Locate bands at changes in direction, at penetrations of walls and floors, at 50-foot maximum intervals in straight runs, and at 25-foot maximum intervals in congested areas.
- G. Color-Coding for Phase and Voltage Identification, 600 V and Less: Use the colors listed below for service, feeder, and branch-circuit conductors.
 1. Color shall be factory applied or, for sizes larger than No. 10 AWG if authorities having jurisdiction permit, field applied.
 2. Colors for 208/120-V Circuits:
 - a. Phase A: Black.
 - b. Phase B: Red.
 - c. Phase C: Blue.
 3. Colors for 480/277-V Circuits:
 - a. Phase A: Brown.
 - b. Phase B: Orange.
 - c. Phase C: Yellow.
 4. Field-Applied, Color-Coding Conductor Tape: Apply in half-lapped turns for a minimum distance of 6 inches from terminal points and in boxes where splices or

taps are made. Apply last two turns of tape with no tension to prevent possible unwinding. Locate bands to avoid obscuring factory cable markings.

- H. Aluminum Wraparound Marker Labels and Metal Tags: Secure tight to surface of conductor or cable at a location with high visibility and accessibility.
- I. Underground-Line Warning Tape: During backfilling of trenches install continuous underground-line warning tape directly above line at 6 to 8 inches below finished grade. Use multiple tapes where width of multiple lines installed in a common trench or concrete envelope exceeds 16 inches overall.

END OF SECTION

SECTION 16120 WIRING SYSTEMS

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

Install all conductors as required for the proper operation of the various systems specified. All connections shall be made complete, and all systems shall be energized and tested for proper operation.

1.02 QUALITY ASSURANCE

- A. Wire manufactured over one year prior to delivery to the site will not be accepted.
- B. Tapes for splices or termination shall be dated by the tape manufacturer to indicate that they have been manufactured no longer than six months prior to use in the Work of this Section.

1.03 DELIVERY, STORAGE, AND HANDLING

- A. Conductors shall be delivered at the building in original packages or on reels, and shall have the tag of the manufacturer attached thereto indicating: Contractor's name, Project title and number, date of manufacturing.
- B. Store material in a clean, dry space and protect from the weather.

1.04 SUPPLEMENTAL SUBMITTALS

- A. Submit a Product Schedule indicating the item description and manufacturer name. The Schedule will be accepted by the Authority for record purposes only, provided that the items are in full compliance with the Specifications.
- B. Certificates

Provide affidavit stating that all items used are UL listed and meets the specifications.

PART 2 - PRODUCTS

2.01 WIRES AND CABLES

A. General

1. Conductors shall conform to A.S.T.M. and I.P.C.E.A. standards, and be UL listed and labeled.
2. Conductors shall have 600 volts insulation and shall be of soft-annealed-uncoated copper of 98% conductivity. Copper clad conductors are not acceptable.
3. All conductors shall have identifiable lettering on the insulator jacket as to voltage rating, wire type, A.W.G. size, insulation, and manufacturer I.D.

B. Wire Description

1. Type USE/RHW: 600V, 75°C. Cable shall be capable of operating continuously at a temperature of 75°C, in both wet and dry locations, with RHW insulation.
2. Type THHN/THWN: 75°C, THHN: 90°C shall have a thermo-plastic polyvinyl chloride insulation with nylon jacket for 600 volts, and shall comply with ASTM, IPCEA S-61-402 (latest edition) and NEMA WC5 (latest edition).
3. TFFN (stranded) shall be thermoplastic insulated, jacketed by abrasion and oil resistant nylon, rated at 105 deg, centigrade.

2.02 SPLICES AND TERMINATIONS

A. General

1. All materials for making splices and terminations shall be specifically designed for use with the type of wire, the cable insulation, the installation and the operating conditions of the specific application and be UL listed.
2. Grounding conductors and bonding jumpers shall be connected by exothermic welding, listed pressure connectors, listed clamps, or other listed means.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Prior to pulling wires and cable, clean raceway systems of all foreign matter and perform all operations necessary so as not to cause damage to wires and cables while pulling.

3.02 INSTALLATION

- A. General
 - 1. Use approved lubrication when installing cables in conduits and raceways. Any pulling compounds shall be compatible with the finish of the wires and cables furnished.
- B. Type THHN/THWN wire
 - 1. Feeder and Branch Circuits
 - 2. Remote-Control Signaling and Power-Limited Circuits: - Circuit Classes 1, 2 or 3, unless otherwise indicated.
- C. Lighting Fixture Wires
 - 1. For wiring within lighting fixtures only, where sizes #14 AWG or smaller is required, use Type TFFN.
- D. Identifications of Wires and Cables
 - 1. Each wire and cable shall be identified by its circuit in all cabinets, boxes, manholes, handholes, wireways and other enclosures and access locations, and at all terminal points.
- E. Terminations
 - 2. For conductor sizes larger than terminal capacity On Equipment: Reduce the larger conductor to the maximum conductor size that terminal can accommodate (reduce section no longer than 1 ft.) the cutting of cable strands to fit terminal is not acceptable.

3.03 FIELD TESTS (NOT USED)

3.04 COMMON NEUTRAL CONDUCTOR

- A. A common neutral may be used for 2 or 3 branch circuits where the circuits are indicated on the Drawings to be enclosed within the same raceway, provided each branch circuit is connected to different phase busses in the panelboard.

- B. Exceptions - The following circuits shall have a separate neutral:
1. Circuits containing ground fault circuit interrupter devices.
 1. Circuits containing solid state dimmers.
 2. Circuits for computers, peripherals and related equipment.
 3. Circuits recommended by equipment manufacturers to have separate neutrals.

3.05 EQUIPMENT GROUNDING CONDUCTOR

Note that equipment-grounding conductors are not shown on the Contract Drawings but it shall be provided, when and as required by code.

END OF SECTION

LIST OF SUBMITTALS

SUBMITTAL	DATE SUBMITTED	DATE APPROVED
Product Schedule	_____	_____
Certificates	_____	_____
Field test report	_____	_____

SECTION 16130 - RACEWAYS AND BOXES

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 raceways, fittings, boxes, enclosures, and cabinets for electrical wiring.
- B. Related Sections include the following:
 - 1. Section 16050 - Basic Electrical Material and Methods

1.3 DEFINITIONS

- A. EMT: Electrical metallic tubing.
- B. ENT: Electrical nonmetallic tubing.
- C. EPDM: Ethylene-propylene-diene terpolymer rubber.
- D. FMC: Flexible metal conduit.
- E. IMC: Intermediate metal conduit.
- F. LFMC: Liquidtight flexible metal conduit.
- G. LFNC: Liquidtight flexible nonmetallic conduit.
- H. NBR: Acrylonitrile-butadiene rubber.
- I. RNC: Rigid nonmetallic conduit.

1.4 SUBMITTALS

- A. Product Data: For surface raceways, wireways and fittings, floor boxes, hinged-cover enclosures, and cabinets
- B. Shop Drawings: For the following raceway components. Include plans, elevations, sections, details, and attachments to other work.
 - 1. Custom enclosures and cabinets.

2. For handholes and boxes for underground wiring, including the following:
 - a. Duct entry provisions, including locations and duct sizes.
 - b. Frame and cover design.
 - c. Grounding details.
 - d. Dimensioned locations of cable rack inserts, and pulling-in and lifting irons.
 - e. Joint details.
- C. Samples for Initial Selection: For wireways, nonmetallic wireways and surface raceways with factory-applied texture and color finishes.
- D. Samples for Verification: For each type of exposed finish required for wireways, nonmetallic wireways and surface raceways.
- E. Coordination Drawings: Conduit routing plans, drawn to scale, on which the following items are shown and coordinated with each other, based on input from installers of the items involved:
 1. Structural members in the paths of conduit groups with common supports.
 2. HVAC and plumbing items and architectural features in the paths of conduit groups with common supports.
- F. Manufacturer Seismic Qualification Certification: Submit certification that enclosures and cabinets and their mounting provisions, including those for internal components, will withstand seismic forces defined in Division 16 Section "Electrical Supports and Seismic Restraints." Include the following:
 1. Basis for Certification: Indicate whether withstand certification is based on actual test of assembled components or on calculation.
 - a. The term "withstand" means "the cabinet or enclosure will remain in place without separation of any parts when subjected to the seismic forces specified and the unit will retain its enclosure characteristics, including its interior accessibility, after the seismic event where required."
 2. Dimensioned Outline Drawings of Equipment Unit: Identify center of gravity and locate and describe mounting and anchorage provisions.
 3. Detailed description of equipment anchorage devices on which the

certification is based and their installation requirements.

G. Qualification Data: For professional engineer and testing agency.

H. Source quality-control test reports.

1.5 QUALITY ASSURANCE

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

B. Comply with NFPA 70.

PART 2 - PRODUCTS

2.1 METAL CONDUIT AND TUBING

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:

B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. AFC Cable Systems, Inc.
2. Alflex Inc.
3. Allied Tube & Conduit; a Tyco International Ltd. Co.
4. Anamet Electrical, Inc.; Anaconda Metal Hose.
5. Electri-Flex Co.
6. Manhattan/CDT/Cole-Flex.
7. Maverick Tube Corporation.
8. O-Z Gedney; a unit of General Signal.
9. Wheatland Tube Company.

C. Rigid Steel Conduit: ANSI C80.1.

D. Aluminum Rigid Conduit: ANSI C80.5.

E. IMC: ANSIC80.6.

- F. PVC-Coated Steel Conduit: PVC-coated rigid steel conduit or IMC.
 - 1. Comply with NEMA RN 1.
 - 2. Coating Thickness: 0.040 inch minimum.
- G. EMT: ANSI C80.3.
- H. FMC: Zinc-coated steel.
- I. LFMC: Flexible steel conduit with PVC jacket
- J. Fittings for Conduit (Including all Types and Flexible and Liquidtight), EMT, and Cable: NEMA FB 1; listed for type and size raceway with which used, and for application and environment in which installed.
 - 1. Conduit Fittings for Hazardous (Classified) Locations: Comply with UL 886.
 - 2. Fittings for EMT: Steel or die-cast, compression type.
 - 3. Coating for Fittings for PVC-Coated Conduit: Minimum 0.040 inch thickness, with overlapping sleeves protecting threaded joints.
- K. Joint Compound for Rigid Steel Conduit or IMC: Listed for use in cable connector assemblies, and compounded for use to lubricate and protect threaded raceway joints from corrosion and enhance their conductivity.

2.2 METALWIREWAYS

- 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:
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Cooper B-Line, Inc.
 - 2. Hoffman.
 - 3. Square D; SchneiderElectric.
- C. Description: Sheet metal sized and shaped as indicated, NEMA 250, unless otherwise indicated.
- D. Fittings and Accessories: Include couplings, offsets, elbows, expansion joints, adapters, hold-down straps, end caps, and other fittings to match and

mate with wireways as required for complete system.

- E. Wireway Covers: Hinged type, Screw-cover type, Flanged-and-gasketed type as indicated.
- F. Finish: Manufacturer's standard enamel finish.

2.3 SURFACE RACEWAYS

A. Surface Metal Raceways: Galvanized steel with snap-on covers. Manufacturer's standard enamel finish in color selected by Architect, Prime coating, ready for field painting.

- 1. 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:
- 2. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Thomas & Betts Corporation.
 - b. Walker Systems, Inc.; Wiremold Company (The).
 - c. Wiremold Company (The); Electrical Sales Division.

B. Surface Nonmetallic Raceways: Two-piece construction, manufactured of rigid PVC with texture and color selected by Architect from manufacturer's standard colors.

- 1. 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:
- 2. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Butler Manufacturing Company; Walker Division.
 - b. Enduro Systems, Inc.; Composite Products Division.
 - c. Hubbell Incorporated; Wiring Device-Kellems Division.
 - d. Lamson & Sessions; Carlon Electrical Products.
 - e. Panduit Corp.
 - f. Walker Systems, Inc.; Wiremold Company (The).
 - g. Wiremold Company (The); Electrical Sales Division.

2.4 BOXES, ENCLOSURES, AND CABINETS

- 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:
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Cooper Crouse-Hinds; Div. of Cooper Industries, Inc.
 - 2. EGS/Appleton Electric.
 - 3. Erickson Electrical Equipment Company.
 - 4. Hoffman.
 - 5. Co. Division.
 - 6. O-Z/Gedney; a unit of General Signal.
 - 7. RACO; a Hubbell Company.
 - 8. Robroy Industries, Inc.; Enclosure Division.
 - 9. Scott Fetzer Co.; Adalet Division.
 - 10. Spring City Electrical Manufacturing Company.
 - 11. Thomas & Betts Corporation.
 - 12. Walker Systems, Inc.; Wiremold Company
 - 13. Woodhead, Daniel Company; Woodhead Industries, Inc. Subsidiary
- C. Sheet Metal Outlet and Device Boxes: NEMA OS 1.
- D. Cast-Metal Outlet and Device Boxes: NEMA FB 1, ferrous alloy, aluminum, Type FD, with gasketed cover.
- E. Nonmetallic Outlet and Device Boxes: NEMA OS 2.
- F. Metal Floor Boxes: Cast or sheet metal, fully adjustable semi-adjustable, rectangular.
- G. Nonmetallic Floor Boxes: Nonadjustable, round.
- H. Small Sheet Metal Pull and Junction Boxes: NEMA OS
- I. Cast-Metal Access, Pull, and Junction Boxes: NEMA FB 1, cast

aluminum, galvanized, cast iron with gasketed cover.

- J. Hinged-Cover Enclosures: NEMA 250, Type 1, with continuous-hinge cover with flush latch, unless otherwise indicated.
 - 1. Metal Enclosures: Steel, finished inside and out with manufacturer's standard enamel.
 - 2. Nonmetallic Enclosures: Plastic, finished inside with radio-frequency-resistant paint.
- K. Cabinets:
 - 1. NEMA 250, Type 1, galvanized-steel box with removable interior panel and removable front, finished inside and out with manufacturer's standard enamel.
 - 2. Hinged door in front cover with flush latch and concealed hinge.
 - 3. Key latch to match panelboards.
 - 4. Metal barriers to separate wiring of different systems and voltage.
 - 5. Accessory feet where required for freestanding equipment.

2.5 SLEEVES FOR RACEWAYS

- A. Steel Pipe Sleeves: ASTM A 53/A 53M, Type E, Grade B, Schedule 40, galvanized steel, plain ends.
- B. Cast-Iron Pipe Sleeves: Cast or fabricated "wall pipe," equivalent to ductile-iron pressure pipe, with plain ends and integral waterstop, unless otherwise indicated.
- C. Sleeves for Rectangular Openings: Galvanized sheet steel with minimum 0.138-inch thickness as indicated and of length to suit application.
- D. Coordinate sleeve selection and application with selection and application of fire stopping specified in Division 7 Section "Through-Penetration Firestop Systems."

2.6 SLEEVE SEALS

- 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:

- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
- C. Basis-of-Design Product: Subject to compliance with requirements, provide or a comparable product by one of the following:
 - 1. Advance Products & Systems, Inc.
 - 2. Calpico, Inc.
 - 3. Metraflex Co.
 - 4. Pipeline Seal and Insulator, Inc.
- D. Description: Modular sealing device, designed for field assembly, to fill annular space between sleeve and cable.
 - 1. Sealing Elements: EPDM, NBR interlocking links shaped to fit surface of cable or conduit. Include type and number required for material and size of raceway or cable.
 - 2. Pressure Plates: Plastic, Carbon steel, Stainless steel. Include two for each sealing element.
 - 3. Connecting Bolts and Nuts: Carbon steel with corrosion-resistant coating of length required to secure pressure plates to sealing elements. Include one for each sealing element.

PART 3 - EXECUTION

3.1 RACEWAY APPLICATION

- A. Outdoors: Apply raceway products as specified below, unless otherwise indicated:
 - 1. Exposed Conduit: Rigid steel conduit, IMC, RNC, Type EPC-40-PVC
 - 2. Concealed Conduit, Aboveground: Rigid steel conduit, IMC, EMT, RNC, Type EPC-40-PVC.
 - 3. Underground Conduit: RNC, Type EPC-80-PVC, direct buried.
 - 4. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment):
 - 5. Boxes and Enclosures, Aboveground: NEMA 250, Type 3R, 4.
 - 6. Application of Handholes and Boxes for Underground Wiring:
 - a. Handholes and Pull Boxes in Driveway, Parking Lot, and

Off-Roadway Locations, Subject to Occasional, Nondeliberate Loading by Heavy Vehicles: Polymer concrete, Fiberglass enclosures with polymer-concrete frame and cover, Fiberglass-reinforced polyester resin, SCTE 77, Tier 15 structural load rating.

- b. Handholes and Pull Boxes in Sidewalk and Similar Applications with a Safety Factor for Nondeliberate Loading by Vehicles: Polymer-concrete units, Heavy-duty fiberglass units with polymer-concrete frame and cover, SCTE 77, Tier 8 structural load rating.
- c. Handholes and Pull Boxes Subject to Light-Duty Pedestrian Traffic Only: Fiberglass-reinforced polyester resin, structurally tested according to SCTE 77 with 3000-lbf vertical loading.

B. Comply with the following indoor applications, unless otherwise indicated:

- 1. Exposed, Not Subject to Physical Damage: EMT
- 2. Exposed, Not Subject to Severe Physical Damage: EMT.
- 3. Exposed and Subject to Severe Physical Damage: Rigid steel conduit, IMC. Includes raceways in the following locations:
 - a. Loading dock.
 - b. Corridors used for traffic of mechanized carts, forklifts, and pallet-handling units.
 - c. Mechanical rooms.
- 4. Concealed in Ceilings and Interior Walls and Partitions: EMT
- 5. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): FMC, except use LFMC in damp or wet locations.
- 6. Damp or Wet Locations: Rigid steel conduit, IMC.
- 7. Raceways for Optical Fiber or Communications Cable in Spaces Used for Environmental Air: Plenum-type, optical fiber/communications cable raceway, EMT Raceways for Optical Fiber or Communications Cable Risers in Vertical Shafts: Riser-type, optical fiber/communications cable raceway, EMT .
- 8. Raceways for Concealed General Purpose Distribution of Optical Fiber or Communications Cable: General-use, optical

fiber/communications cable raceway,

9. Boxes and Enclosures: NEMA 250, Type 1, except use NEMA 250, Type 4, stainless steel, nonmetallic in damp or wet locations.

C. Minimum Raceway Size: 3/4-inch trade size.

D. Raceway Fittings: Compatible with raceways and suitable for use and location.

1. Rigid and Intermediate Steel Conduit: Use threaded rigid steel conduit fittings, unless otherwise indicated.

2. PVC Externally Coated, Rigid Steel Conduits: Use only fittings listed for use with that material. Patch and seal all joints, nicks, and scrapes in PVC coating after installing conduits and fittings. Use sealant recommended by fitting manufacturer.

E. Install nonferrous conduit or tubing for circuits operating above 60 Hz. Where aluminum raceways are installed for such circuits and pass through concrete, install in nonmetallic sleeve.

F. Do not install aluminum conduits in contact with concrete.

3.2 INSTALLATION

A. Comply with NECA 1 for installation requirements applicable to products specified in Part 2 except where requirements on Drawings or in this Article are stricter.

B. Keep raceways at least 6 inches away from parallel runs of flues and steam or hot-water pipes. Install horizontal raceway runs above water and steam piping.

C. Complete raceway installation before starting conductor installation.

D. Support raceways as specified in Division 16 Section "Electrical Supports and Seismic Restraints."

E. Arrange stub-ups so curved portions of bends are not visible above the finished slab.

F. Install no more than the equivalent of three 90-degree bends in any conduit run except for communications conduits, for which fewer bends are allowed.

G. Conceal conduit and EMT within finished walls, ceilings, and floors, unless

otherwise indicated.

3.3 SLEEVE INSTALLATION FOR ELECTRICAL PENETRATIONS

- A. Coordinates sleeve selection and application with selection and application of firestopping specified in Division 7 Section "Through-Penetration Firestop Systems."
- B. Concrete Slabs and Walls: Install sleeves for penetrations unless core-drilled holes or formed openings are used. Install sleeves during erection of slabs and walls.
- C. Use pipe sleeves unless penetration arrangement requires rectangular sleeved opening.
- D. Rectangular Sleeve Minimum Metal Thickness:
 - 1. For sleeve cross-section rectangle perimeter less than 50 inches and no side greater than 16 inches, thickness shall be 0.052 inch
 - 2. For sleeve cross-section rectangle perimeter equal to, or greater than, 50 inches and 1 or more sides equal to, or greater than, 16 inches thickness shall be 0.138 inch
- E. Fire-Rated Assemblies: Install sleeves for penetrations of fire-rated floor and wall assemblies unless openings compatible with firestop system used are fabricated during construction of floor or wall.
- F. Cut sleeves to length for mounting flush with both surfaces of walls.
- G. Extend sleeves installed in floors 2 inches above finished floor level.
- H. Size pipe sleeves to provide 1/4-inch annular clear space between sleeve and raceway unless sleeve seal is to be installed or unless seismic criteria require different clearance.
- I. Seal space outside of sleeves with grout for penetrations of concrete and masonry and with approved joint compound for gypsum board assemblies.
- J. Interior Penetrations of Non-Fire-Rated Walls and Floors: Seal annular space between sleeve and raceway, using joint sealant appropriate for size, depth, and location of joint. Refer to Division 7 Section "Joint Sealants" for materials and installation.
- K. Fire-Rated-Assembly Penetrations: Maintain indicated fire rating of walls, partitions, ceilings, and floors at raceway penetrations. Install sleeves and seal with firestop materials. Comply with Division 7 Section "Through-Penetration Firestop Systems."

- L. Roof-Penetration Sleeves: Seal penetration of individual raceways with flexible, boot- type flashing units applied in coordination with roofing work.
- M. Aboveground, Exterior-Wall Penetrations: Seal penetrations using sleeves and mechanical sleeve seals. Select sleeve size to allow for I-inch annular clear space between pipe and sleeve for installing mechanical sleeve seals.
- N. Underground, Exterior-Wall Penetrations: Install cast-iron "wall pipes" for sleeves. Size sleeves to allow for I-inch annular clear space between raceway and sleeve for installing mechanical sleeve seals.

3.4 SLEEVE-SEAL INSTALLATION

- A. Install to seal underground, exterior wall penetrations.
- B. Use type and number of sealing elements recommended by manufacturer for raceway material and size. Position raceway in center of sleeve. Assemble mechanical sleeve seals and install in annular space between raceway and sleeve. Tighten bolts against pressure plates that cause sealing elements to expand and make watertight seal.

3.5 FIRESTOPPING

- A. Apply firestopping to electrical penetrations of fire-rated floor and wall assemblies to restore original fire-resistance rating of assembly. Firestopping materials and installation requirements are specified in Division 7 Section "Through-Penetration Firestop Systems."

3.6 PROTECTION

- B. Provide final protection and maintain conditions that ensure coatings, finishes, and cabinets are without damage or deterioration at time of Substantial Completion.
 - 1. Repair damage to galvanized finishes with zinc-rich paint recommended by manufacturer.
 - 2. Repair damage to PVC or paint finishes with matching touchup coating recommended by manufacturer.

END OF SECTION

SECTION 16501 LAMPS AND ACCESSORIES

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

- A. Provide lamps and accessories as specified herein and as indicated on Drawings. All lamps and their installation shall comply with NJ State Energy Conservation Construction Code – Effective 7/03/2002. All installations and equipment shall comply with NJ Electrical code.
- B. Lamps – Code Compliance
 - 1. All T8 or T5 LED lamps
 - 2. Cool white
- C. Fixtures shall be high efficiency LED fluorescent. In general, fluorescent lamps shall be T8 triphosphor type wired directly to the fixture suited for the application.

1.02 LAMPS, GENERALLY

- A. Fluorescent lamps for all fixtures shall be provided by the Contractor. Quality lamps will be as indicated on Drawings, or as required by the fixture installation.
- B. Lamps shall be the standard product of General Electric Lamp CO., Osram/Sylvania Electric Co., and Phillips Co.
- C. In general, LED fluorescent lamps shall be in 120 volt direct-wired LED fixtures wired in parallel circuits.

1.03 SPARES

- A. In addition to those installed in fixtures, the Contractor shall provide spare lamps in original cartons, packaged and labeled and delivered to the Authority's Representative as follows:
 - 1. Provide twelve spare lamps

1.04 SUPPLEMENTAL SUBMITTALS

- A. Submit samples as requested by the Authority.
- B. Spare.

PART 2 - PRODUCTS

2.01 INCANDESCENT LAMPS (NOT USED)

2.02 LED FLUORESCENT LAMPS

A. Fluorescent lamps shall be high efficiency LED lamps.

2.03 METAL HALIDE (NOT USED)

2.04 HIGH PRESSURE SODIUM (NOT USED)

2.05 BALLAST (NOT USED)

2.06 GUARDS (NOT USED)

PART 3 - EXECUTION

3.01 INSTALLATION

A. Provide the precise complement of LED lamps in every door lighting fixture provided under the Contract.

B. Install lamps in accordance with manufacturer's instructions.

END OF SECTION

APPENDIX 1

JOHN H. ALLGAIR, PE, PP, LS (1983-2001)
DAVID J. SAMUEL, PE, PP, CME
JOHN J. STEFANI, PE, LS, PP, CME
JAY B. CORNELL, PE, PP, CME
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JOHN J. HESS, PE, PP, CME

March 31, 2020

Thomas O. Mineo, P.E., County Engineer
County of Union Division of Engineering
2325 South Avenue
Scotch Plains, New Jersey 07076

**Re: Report - Indoor Air Quality Assessment and Asbestos Containing Materials
Union County Elections Headquarters – Basement Areas
271 North Broad Street
Elizabeth, New Jersey 07201**

Dear Mr. Mineo:

CME Associates (CME) is pleased to provide for your review the enclosed report prepared by Environmental Connection Inc. (ECI), dated March 25, 2020, to document the Indoor Air Quality (IAQ) Assessment and Asbestos Containing Materials (ACM) Survey conducted in the basement of the Union County Board of Elections building. On February 20, 2020, ECI performed an IAQ and water damage assessment of certain areas of the basement in response to the County's concerns of potential mold presence. During the assessment, the ECI technician observed damaged plaster walls and collected a limited number of asbestos samples. On March 19, 2020, EC returned to the site to complete asbestos sampling of water damaged building materials in the basement and to further define the remediation scope of work requirements.

As part of the mold investigation, ECI collected two (2) surface swab samples of the suspect mold growth observed in the basement areas. One (1) sample was collected from paperwork in the Storage Area of the main room, and one (1) sample was collected from the ceiling tiles in the Bathroom. The swab sample results confirmed that the suspect growths observed on the paperwork and ceiling tiles are mold. In addition, fungal spore air samples were collected in three (3) interior locations and one (1) exterior location. Airborne spore sampling analytical results revealed that all interior samples contained higher total spore counts than the exterior sample. Total spore counts detected in each indoor sample were "Medium to Very High" by National Allergy Bureau Guideline standards. Each of the spore types detected indoors are indicators of water damage. Occupant Comfort Parameters, including Temperature, Relative Humidity, Carbon Dioxide and Carbon Monoxide, were also analyzed as part of the IAQ assessment and found to be within normal range.

The inspection for ACM was performed in accordance with AHERA regulations and included collection of samples from water damaged building materials in the basement, including plaster walls, ceiling tile, sheetrock, joint compound, and vinyl flooring tile. According to the USEPA,



Attn: Thomas O. Mineo, P.E., County Engineer
County of Union
Re: Report of Findings – IAQ and ACM Assessment

March 31, 2020
Page 2

materials containing greater than 1% asbestos content by weight are classified as asbestos containing materials. Brown Coat Plaster was determined to contain 2% asbestos and the 9" x 9" bottom layer of double layered floor tile was found to contain 4% Chrysotile asbestos. Therefore, both materials are defined as an Asbestos Containing Material.

CME recommends the County remove water damaged materials in the basement, including retention of qualified contractors to perform the necessary microbial and ACM remediation. In addition, sources of water infiltration should be mitigated prior to and/or in conjunction with microbial remediation to prevent the re-occurrence of microbial amplification.

Please review the attached report for the full sampling results and detailed recommendations. Should you have any questions in this regard, please contact us at your convenience.

Very truly yours,
CME Associates

Behram Turan, P.E., LSRP- Principal
Director of Environmental Services

Enclosures



March 25, 2020

Ms. Jacquelyn Fagan
Project Manager
CME Associates
3759 US Highway 1 South - Suite 100
Monmouth Junction, New Jersey 08852

Re: Report - Indoor Air Quality Assessment and Limited Asbestos Containing Materials
Union County Elections Headquarters – Basement Areas
271 North Broad Street
Elizabeth, New Jersey 07201

EC Project #: 20092-01

Section 1.0 Introduction

On February 20, 2020, Environmental Connection, Inc., (EC) performed an Indoor Air Quality (IAQ) and water damage assessment of the basement areas of the Union County Board of Elections building. The assessment was performed in response to occupant concerns regarding air quality and to prepare a remediation protocol. Activities performed during the assessment included a visual inspection, collection of occupant comfort parameter measurements (carbon dioxide, carbon monoxide, relative humidity, and temperature), the collection of surface swab samples to be analyzed for the presence of mold/fungal growth, and the collection of air samples to be analyzed for airborne mold/fungal spores. As per CME Associates, Inc. instruction, EC shall develop the remediation protocol based on the findings of the assessment. On March 19, 2020, EC returned to the site to complete asbestos sampling of water damaged building materials in the basement, to further define the remediation scope of work requirements.

The following sections detail the results of our assessment.

Section 2.0 Visual Inspection

The assessment began with a visual inspection of the area of concern, the basement areas of the Union Board of Elections building. The basement areas had reportedly experienced water leaks over a period of years from above and through exterior walls. There were signs of previous leaks and water damage to ceiling tiles, drywall, plaster, wood paneling and some stored contents (papers, boxes, and other miscellaneous items).

In the Break Room area of the basement there were two (2) windows which were inadequately boarded/sealed up. Per the Elections personnel, these areas leak consistently. The wood paneling along this wall and under the windows was severely damaged by the water intrusion. There were wood studs behind the paneling which also had experienced water intrusion and had visible damage and microbial growth. There were also several ceiling tiles and an associated drywall ceiling which showed signs of previous water leaks and exhibited damage. Plaster walls exhibited water damage and degradation as well.



In the File Storage Room, EC observed boxes of paper ballots and cardboard boxes which were water damaged and had visible microbial growth. The drywall partition which divides the storage area from the rest of the room had also experienced water damage from above. The two (2) other storage areas in the basement stored various tools, papers, boxes and office supplies. These areas also showed some signs of previous water damage.

The Bathroom in this area was constructed mainly of ceramic tile with drop in ceiling tiles. Ceiling tiles in the Bathroom showed signs of water damage and microbial growth.

Section 3.0 Surface Sampling

3.1 Sampling and Analytical Methods

EC collected two (2) surface swab samples of the suspect mold growth observed in the basement areas. The first sample was collected from paperwork in the Storage Area of the main room. The second sample was collected from the ceiling tiles in the Bathroom. Surface swab sampling for the presence of mold was performed utilizing a "Precision" sterile swab or Culture Collection and Transport System (CATS). The CAT system consists of a single plastic tube containing a small quantity of PDC-100 transport medium and a sterile swab. Each sample was collected by, removing the sterile swab from the package, coating the cotton head of the swab with medium from the base of the tube, and wiping an approximately two (2) square inch area. The swab was then placed back into the transport/culture media vessel at the base of the tube for preservation until analysis. The microbial swab analysis was performed by EMSL Analytical, Inc., of Piscataway, New Jersey. EMSL Analytical, Inc. is accredited by the American Industrial Hygiene Association (AIHA) and is a participant in the Environmental Microbiological Laboratory Accreditation Program.

3.2 Results

Swab sampling analytical results are reported in Counts/Area Analyzed. The results are then categorized based on concentration. The categories are as follows:

Category	Counts/Area Analyzed
Rare	1-10
Low	11-100
Medium	101-1000
High	>1000

Analysis revealed that the sample collected from the paperwork contained "Low to Medium" counts of *Aspergillus/Penicillium*, *Cladosporium* and *Stachybotrys/Memnoniella*. The sample collected from the ceiling tile contained "Rare" counts of *Alternaria* and *Cladosporium*. The swab sample results confirm that the suspect growths observed on the paperwork and ceiling tiles are mold. The Surface Swab Sampling Chain of Custody and Laboratory Analytical Certificate are included in Attachment II.

Section 4.0 Fungal Spore Trap Air Sampling and Analysis

4.1 Sampling and Analytical Methods



EC utilized the Air-O-Cell cassette air sampling technique for the collection and analysis of a wide range of airborne particles, including fungal spores, pollen, insect parts, etc. The sampling apparatus consists of a sampling cassette attached to a high-volume pump. The sampling cassette is a plastic housing with an adhesive coated glass slide in the center commonly referred to as the sample media. Ambient air is drawn through the cassette via suction provided by the pump. The pump collects air at a flow rate of 15 Liters per minute (L/min.) for 10 minutes to achieve 150 liters of air. Airborne particulate matter impacts and adheres to the sample media. Once sampling is completed, samples are then packaged and transported to EMSL Analytical, Inc., in Piscataway, New Jersey, an American Industrial Hygiene Association (AIHA) accredited laboratory and participant in the Environmental Microbiology Laboratory Accreditation Program (EMLAP), for analysis via direct microscopic identification. Each particle on the slide is identified and quantified by the analyst regardless of viability. The analyst makes every effort to differentiate between the various spore types observed. Spore types that are not able to be differentiated are categorized into broader groups such as *Basidiospores*.

4.2 Interpretation of the Data

The analytical results report the species type and quantity of spores found on the sample media. Quantities are reported in counts/m³ and are representative of the air space where the sample was collected. The accepted standard for diagnosing the presence of an interior mold issue is to compare an interior sample to an exterior sample, commonly referred to as the background concentration. Species of mold found on the interior sample should be similar to those found on the exterior sample. The interior sample should also contain lower spore counts.

The National Allergy Bureau Guideline for Relative Exposures to Outdoor Air Pollen and Spores (NABG), identifies the following fungal spore concentration descriptors, in counts per cubic meter of air (counts/m³).

Allergen	Very Low	Low	Medium	High	Very High
Molds	<500	500-1,000	1,000 – 5,000	5,000-10,000	>20,000
Pollen	1-50	50-100	100-500	500-1,000	>1,000

4.3 Results

Fungal spore air samples were collected in three (3) interior locations, along with one (1) exterior location. The locations sampled were as follows:

Table 1 - Laboratory Analytical Results Union County Board of Elections-Baseament 271 North Broad Street Elizabeth, New Jersey 07201		
Location	Counts/m ³	Exterior Counts/m ³
Main Room in Basement	48,040	507
Break Room Area	7,440	
Bathroom	2,404	
Exterior	-	
Blank	0	



- Airborne spore sampling analytical results revealed that all interior samples contained higher total spore counts than the exterior sample.
- The primary spore type detected indoors was *Aspergillus/Penicillium* like spores, which is a common spore type indoors and outdoors, and is found in household dust. Amplification of *Aspergillus/Pencillium* like spores indoors is an indicator of water damage. There were outliers present in the Bathroom air sample. *Stachybotrys/Memnoniella* and *Chaetomium* were present in the interior air sample but were not present in the outdoor air sample. Both of these spore types are indicators of water damage.
- Total spore counts detected on each indoor sample were “Medium to Very High” by National Allergy Bureau Guideline standards. Note: The NABG classifications are representative of relative exposures and are not directly linked to health outcomes.

The Airborne Spore Sampling Chain of Custody and Laboratory Analytical Certificate are included in Attachment III.

Section 5.0 Occupant Comfort Parameters

5.1 Test Method and Sampling Strategy

Temperature, Relative Humidity, Carbon Dioxide and Carbon Monoxide were collected with an Advanced Sense IAQ Plus Portable Monitor. The instrument is equipped with thermocouple sensors for temperature (measured in degrees Fahrenheit) and relative humidity (%RH) readings. An infrared sensor within the unit measures Carbon Dioxide (CO₂) levels, while a chemical cell detector records Carbon Monoxide (CO) levels. Sampling consists of mounting the unit in selected locations, where all four (4) comfort parameters are recorded.

5.2 Results

Table 2 - Occupant Comfort Measurements Union County Board of Elections-Baseament 271 North Broad Street Elizabeth, New Jersey 07201				
Location	CO (ppm)	CO ₂ (ppm)	Temp (°)	Relative Humidity (%)
Main Basement Room	0.0	507	72.4	20.7
Break Room	0.0	421	72.3	22.1
Bathroom	0.0	548	72.0	22.6
Storage Closet	0.0	701	72.1	21.8
Outside	0.0	442	44.1	9.2

5.3 Discussion and Data Interpretation

5.3.1 Carbon Monoxide



Carbon monoxide (CO) is a colorless, odorless gas emitted from combustion processes. Nationally, and particularly in urban areas, the majority of CO emissions to ambient air come from mobile sources. CO can cause harmful health effects by reducing oxygen delivery to the body's organs (such as the heart and brain) and tissue. At extremely high levels, CO can cause death. The OSHA Permissible Exposure Limit (PEL) for an 8-hour Time Weighted Average (TWA) is not to exceed 35 ppm. In general, CO levels above the ambient concentration of 1 ppm suggests that exhaust fumes from a combustion source have migrated to occupied spaces. Detected interior CO concentrations were below the limit of detection (0.1 ppm) for the device utilized.

5.3.2 Carbon Dioxide

The American Society of Heating, Refrigeration and Air-Conditioning Engineers, Inc., (ASHRAE) Standard 62.1-2016, Ventilation for Acceptable Indoor Air Quality, indicates that, in an office building, Carbon Dioxide concentrations of approximately 700 ppm above the outdoor level reflect that the appropriate fresh air exchange is being provided by the HVAC system. The measurements collected during the inspection meet the criteria established by ASHRAE.

5.3.3 Temperature and Relative Humidity

The ASHRAE 55-2013 Standard recommends temperatures of 67 to 80.5°F for people wearing typical seasonable clothing during light sedentary activity. ASHRAE also recommends that HVAC systems be designed to maintain relative humidity below 65%. Temperature and Relative humidity measurements throughout the office were within the recommended criteria.

Section 6.0 Asbestos Containing Material Assessments

Asbestos is a naturally occurring mineral categorized into two (2) groups, Serpentine and Amphibole, based on morphology. The Serpentine group is comprised of Chrysotile asbestos, the Amphibole group consists of Amosite, Crocidolite, Tremolite, Anthophyllite, and other forms of asbestos. Asbestos was utilized in more than 3,600 products for its fire resistance, tensile strength, inertness, chemical binding properties, and durability. Due to enhanced durability, asbestos containing products remain present in the built environment decades after installation. Public awareness of the hazards associated with airborne asbestos fibers increased through the 1970s and culminated in the adoption of the Asbestos Hazard Emergency Response Act (AHERA), signed into law (40 CFR, Part 763) in 1986. Briefly, AHERA established Federal regulations pertaining to inspections to identify asbestos containing materials, appropriate response actions, and Asbestos Management Plan requirements.

The inspection for asbestos containing materials was performed in accordance with AHERA regulations and encompassed accessible interior and exterior spaces. Samples were collected in sufficient quantity as mandated by 40 CFR, Part 763.86. Samples were then submitted to EMSL Analytical, Inc., located in Piscataway, New Jersey. EMSL Analytical, Inc., is accredited by the American Industrial Hygiene Association (AIHA) and participates in the National Voluntary Laboratory Accreditation Program (NVLAP). Samples were analyzed utilizing Polarized Light Microscopy (PLM) via EPA Method 600/R-93/116.

Results of analysis methods are reported in percentage by weight. According to the USEPA, materials containing greater than 1% asbestos content by weight are classified as asbestos containing materials. The



following Table documents all identified suspect asbestos containing materials and summarizes the laboratory analytical results.

Table 1 – ACM Sampling Analytical Results Summary Union County Board of Elections-Basement		
ID #	Material	Results of Analysis
01	Skim Coat Plaster	None Detected
01A	Brown Coat Plaster to Skim Coat Plaster	2% Chrysotile
02	2’x4’ Dot/Squiggle Ceiling Tile	None Detected
03	Sheetrock	None Detected
03A	Joint Compound associated with Sheetrock	<1% Chrysotile
04/04A	Double Layered Vinyl Floor Tile and Black Mastic	4% Chrysotile in Bottom Green 9”x9” Vinyl Floor Tile Layer Only

Brown Coat Plaster was determined to contain greater than 1% asbestos and is therefore defined as an Asbestos Containing Material. Due to the inseparability of the Skim Coat and Brown Coat Plaster layers, EC recommends that any plaster disturbance be performed by State of New Jersey licensed Asbestos Contractor(s). The 9” x 9” bottom layer of double layered floor tile was found to contain 4% Chrysotile asbestos. Damaged double layered floor tile should be removed by a State of New Jersey licensed Asbestos Contractor.

Section 7.0 Conclusions and Recommendations

7.1 Conclusions

- Musty odors and signs of water intrusion were observed throughout the basement areas.
- Suspect mold growth was observed on contents in the basement Paper/file Storage room.
- Water damaged drywall was observed in the Paper/file Storage room and above the ceiling tiles in the Break Room.
- Water damaged contents were observed in the storage room adjacent to the Bathroom and in the Break Room.
- Ceiling tiles with water damage and or microbial growth were observed in the Break Room and Bathroom.
- Water damaged wood paneling and framing were observed in the Break Room along the exterior wall, particularly around the two windows which were poorly boarded up. These materials also indicated signs of microbial growth.
- Water damaged plaster was observed in the basement area near the Paper Storage Area and throughout the basement.



- Indoor airborne spore sampling results revealed the presence of elevated spore concentrations relative to the outdoor sample.
- The HVAC registers in the basement areas showed signs of dust loading.
- Asbestos containing 9" x 9" vinyl floor tiles and associated mastic were observed in the Paper Storage Room below the 12" x 12" vinyl floor tile in the basement area. The double-layered vinyl flooring exhibited water damage.
- Plaster was damaged near the main Paper Storage Area and in spots throughout the basement. The plaster was tested for asbestos and the brown scratch coat was identified as an asbestos containing material.
- Occupant comfort parameter measurements were generally within the recommended criteria.

7.2 Recommendations

- Sources of water infiltration should be mitigated prior to and/or in conjunction with microbial remediation to prevent the re-occurrence of microbial amplification.
- A containment area including HEPA filtered air scrubbers and polyethylene sheeting should be utilized by a qualified microbial remediation contractor during all removal and cleaning activities.
- Water damaged/moldy papers and contents in the Paper Storage Room should be removed from the area and disposed of. If they cannot be disposed of they should be HEPA vacuumed by a Microbial remediation contractor and sealed in clear polyethylene bags. These bags should be stored in an area outside the occupiable spaces of the basement.
- Remove the drywall walls from floor to ceiling that separates the Paper Storage Area from the main basement area (approximately 175 square feet of drywall).
- Remove all water damaged and paper contents/trash from the Storage Room adjacent to the Bathroom and the Storage Room in the Break Room. Once contents are removed the rooms shall be detail cleaned using HEPA vacuums and a Biocide solution.
- Remove all the wood paneling from the exterior wall of the Break Room. Once removed all the wood framing should be abrasively cleaned using HEPA vacuums and a biocide solution then sealed with an anti-microbial encapsulant. If the framing cannot be cleaned it shall be removed from floor to ceiling and disposed of as contaminated material (approximately 300 square feet of wood paneling).
- Remove all wood and wood paneling which is enclosing the two (2) windows in the Break Room. Once removed all remaining components shall be abrasively cleaned using HEPA vacuums and a biocide solution and treated with an antimicrobial sealant.



- Remove all water damaged drywall and ceiling tiles from the Break Room (approximately 600 square feet of drywall and ceiling tiles). NOTE: Drywall, joint compound and ceiling tiles have been tested for asbestos and were found to be negative for Asbestos.
- Remove all ceiling tiles from the basement Bathroom (approximately 150 square feet).
- EC recommends engaging a Microbial Remediation Contractor to clean all components of the HVAC system including the ductwork which services the basement area.
- Engage a State of New Jersey licensed asbestos contractor to remove water damaged 9” x 9” Green Vinyl Floor Tiles (approximately 100 square feet) from the Main Paper/file Storage Room.
- Engage a State of New Jersey licensed asbestos contractor to repair and stabilize the damaged asbestos containing plaster in the basement.
- The entire basement area including furniture and contents should be detail cleaned utilizing High Efficiency Particulate Air (HEPA) vacuums and biocide solution. During the cleaning, HEPA Air Filtration Devices should be operated in the work areas.

Should you have any questions or require additional information, please contact the undersigned at your convenience.

Respectfully Submitted:
ENVIRONMENTAL CONNECTION, INC.

A handwritten signature in blue ink, appearing to read 'Dominick Dercole'.

Dominick Dercole
Project Manager

Attachments:

- Attachment I – Site Photographs
- Attachment II – Chain of Custody and Certificates of Analysis for Surface Swab Sampling
- Attachment III – Chain of Custody and Certificates of Analysis for Airborne Fungal Spore Sampling
- Attachment IV – Chain of Custody and Certificates of Analysis for Asbestos Bulk Sampling
- Attachment V – Remediation Drawing
- Attachment VI – Certifications/Accreditations

Attachment I


Site Photographs



Photograph 1 – Water damaged and moldy papers in the main file/paper storage room. Mold was confirmed on papers using surface swab sample S1.



Photograph 2 –View of basement break room with poorly sealed windows to the outside and water damaged wood paneling.


 ENVIRONMENTAL CONNECTION INC	Site Photographs	
	Date Taken	February 20, 2020
	Client	CME Associates
	Location	Union Elections HQ – Basement
EC Project # 20092-01	Address	271 North Broad Street, Elizabeth, New Jersey



Photograph 3 – View of Water damaged Asbestos containing plaster.



Photograph 4 – View above storage closet and damaged plaster. This area has experienced leaks for several years per maintenance staff.


 ENVIRONMENTAL CONNECTION INC	Site Photographs	
	Date Taken	February 20, 2020
	Client	CME Associates
	Location	Union Elections HQ – Basement
EC Project # 20092-01	Address	271 North Broad Street, Elizabeth, New Jersey



Photograph 5 – Water damaged and moldy wood associated with sealed windows in break room area.



Photograph 6 – View water damaged drywall ceiling above drop ceiling tiles in the break room area.


 ENVIRONMENTAL CONNECTION INC	Site Photographs	
	Date Taken	February 20, 2020
	Client	CME Associates
	Location	Union Elections HQ – Basement
EC Project # 20092-01	Address	271 North Broad Street, Elizabeth, New Jersey



Photograph 7 – Water damaged 9” x 9” asbestos vinyl floor tiles and black mastic.



Photograph 8 – Water damaged drywall in the paper/file storage room.

 ENVIRONMENTAL CONNECTION INC	Site Photographs	
	Date Taken	February 20, 2020
	Client	CME Associates
	Location	Union Elections HQ – Basement
EC Project # 20092-01	Address	271 North Broad Street, Elizabeth, New Jersey

Attachment II

Chain of Custody and Certificates of Analysis for Surface Swab Sampling



EMSL Analytical, Inc.

1056 Stelton Road Piscataway, NJ 08854

Tel/Fax: (732) 981-0550 / (732) 981-0551

<http://www.EMSL.com> / piscatawaylab@emsl.com

Order ID: 052000850
Customer ID: ENVI65
Customer PO:
Project ID:

Attention: Dominick Dercole Environmental Connection, Inc. 120 North Warren Street Trenton, NJ 08608	Phone: (609) 392-4200 Fax: Collected Date: 02/20/2020 Received Date: 02/20/2020 Analyzed Date: 02/20/2020
Project ID: 20092-01 / CME, IAQ Assessment, Union Board Of Elections	

Test Report: Microscopic Examination of Fungal Spores, Fungal Structures, Hyphae, and Other Particulates from Swab Samples (EMSL Method MICRO-SOP-200)

Lab Sample Number: Client Sample ID: Sample Location:	052000850-0006 S1DD022020 Storage Closet - Papers	052000850-0007 S2DD022020 Bathroom - Ceiling Tile			
Spore Types	Category	Category			
Alternaria (Ulocladium)	-	Rare			
Ascospores	-	-			
Aspergillus/Penicillium	Low	-			
Basidiospores	-	-			
Bipolaris++	-	-			
Chaetomium	-	-			
Cladosporium	Low	Rare			
Curvularia	-	-			
Epicoccum	-	-			
Fusarium	-	-			
Ganoderma	-	-			
Myxomycetes++	-	-			
Pithomyces++	-	-			
Rust	-	-			
Scopulariopsis/Microascus	-	-			
Stachybotrys/Memnoniella	Medium	-			
Unidentifiable Spores	-	-			
Zygomycetes	-	-			
Hyphal Fragment	-	High			
Insect Fragment	-	-			
Pollen	-	-			
Fibrous Particulate	Low	Medium			

Category: Count/per area analyzed - Rare: 1 to 10 Low: 11 to 100 Medium: 101 to 1000 High: >1000
 - Denotes Not Detected.
 ++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.
 * = Sample contains fruiting structures and/or hyphae associated with the spores.

Chaiyut Sae Lao, Laboratory Manager
or other Approved Signatory

No discernable field blank was submitted with this group of samples.

EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. When the information supplied by the customer can affect the validity of the result, it will be noted on the report.
Samples analyzed by EMSL Analytical, Inc. Piscataway, NJ AIHA-LAP, LLC--EMLAP Accredited #167035

Initial report from: 02/24/2020 08:29 AM

For information on the fungi listed in this report, please visit the Resources section at www.emsl.com

Attachment III

Chain of Custody and Certificates of Analysis for Airborne Fungal Spore Sampling



EMSL Analytical, Inc.

1056 Stelton Road Piscataway, NJ 08854
Phone/Fax: (732) 981-0550 / (732) 981-0551
<http://www.EMSL.com> / piscatawaylab@emsl.com

Order ID: 052000850
Customer ID: ENVI65
Customer PO:
Project ID:

Attn: Dominick Dercole
Environmental Connection, Inc.
120 North Warren Street
Trenton, NJ 08608

Phone: (609) 392-4200
Fax:
Collected: 02/20/2020
Received: 02/20/2020
Analyzed: 02/20/2020

Proj: 20092-01 / CME, IAQ Assessment, Union Board Of Elections

Test Report: Air-O-Cell™ Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)

Lab Sample Number	Particle Identification	Sample Concentration (counts/m³)	Background Concentration (counts/m³)	Background Corrected (counts/m³)
052000850-0001	Alternaria (Ulocladium)	None Detected	None Detected	Equal To Background
	Ascospores	None Detected	40	Less than Background
	Aspergillus/Penicillium	48000	200	47800
Client Sample ID 29576294	Basidiospores	None Detected	20	Less than Background
	Bipolaris++	None Detected	None Detected	Equal To Background
	Chaetomium	None Detected	None Detected	Equal To Background
	Cladosporium	40	220	Less than Background
Location Board Basement	Curvularia	None Detected	None Detected	Equal To Background
	Epicoccum	None Detected	None Detected	Equal To Background
	Fusarium	None Detected	None Detected	Equal To Background
	Ganoderma	None Detected	None Detected	Equal To Background
Sample Volume (L) 150	Myxomycetes++	None Detected	7*	Less than Background
	Pithomyces++	None Detected	None Detected	Equal To Background
	Rust	None Detected	None Detected	Equal To Background
	Scopulariopsis/Microascus	None Detected	None Detected	Equal To Background
Sample Type Inside	Stachybotrys/Memnoniella	None Detected	None Detected	Equal To Background
	Unidentifiable Spores	None Detected	None Detected	Equal To Background
	Zygomycetes	None Detected	None Detected	Equal To Background
Comments	Botryotrichum	None Detected	20	Less than Background
	Total Fungi	48040	507	47500
	Other			
	Hyphal Fragment	None Detected	None Detected	Equal To Background
	Insect Fragment	None Detected	None Detected	Equal To Background
	Pollen	10*	7*	3
	Analytical Sensitivity 600x:	22	counts/cubic meter	
	Analytical Sensitivity 300x *:	7*	counts/cubic meter	
	Skin Fragments:	1	1 to 4 (low to high)	
	Fibrous Particulate:	1	1 to 4 (low to high)	
	Background:	2	1 to 4 (low to high); 5 (overloaded)	

Chaiyut Sae Lao, Laboratory Manager
or Other Approved Signatory

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.

High levels of background particulate can obscure spores and other particulates, leading to underestimation. Background levels of 5 indicate an overloading of background particulates, prohibiting accurate detection and quantification. Present = Spores detected on overloaded samples. Results are not blank corrected unless otherwise noted. The detection limit is equal to one fungal spore, structure, pollen, fiber particle or insect fragment. "" Denotes particles found at 300X. "-" Denotes not detected. Due to method stopping rules, raw counts in excess of 100 are extrapolated based on the percentage analyzed. EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. When the information supplied by the customer can affect the validity of the result, it will be noted on the report.
Samples analyzed by EMSL Analytical, Inc. Piscataway, NJ AIHA-LAP, LLC--EMLAP Accredited #167035

Initial report from: 02/24/2020 08:29:35

For Information on the fungi listed in this report please visit the Resources section at www.emsl.com



EMSL Analytical, Inc.

1056 Stelton Road Piscataway, NJ 08854
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<http://www.EMSL.com> / piscatawaylab@emsl.com

Order ID: 052000850
 Customer ID: ENVI65
 Customer PO:
 Project ID:

Attn: Dominick Dercole
 Environmental Connection, Inc.
 120 North Warren Street
 Trenton, NJ 08608

Phone: (609) 392-4200
 Fax:
 Collected: 02/20/2020
 Received: 02/20/2020
 Analyzed: 02/20/2020

Proj: 20092-01 / CME, IAQ Assessment, Union Board Of Elections

Test Report: Air-O-Cell™ Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)

Lab Sample Number	Particle Identification	Sample Concentration (counts/m³)	Background Concentration (counts/m³)	Background Corrected (counts/m³)
052000850-0002	Alternaria (Ulocladium)	None Detected	None Detected	Equal To Background
	Ascospores	None Detected	40	Less than Background
	Aspergillus/Penicillium	7440	200	7240
Client Sample ID 29576284	Basidiospores	None Detected	20	Less than Background
	Bipolaris++	None Detected	None Detected	Equal To Background
	Chaetomium	None Detected	None Detected	Equal To Background
	Cladosporium	None Detected	220	Less than Background
Location Break Room	Curvularia	None Detected	None Detected	Equal To Background
	Epicoccum	None Detected	None Detected	Equal To Background
	Fusarium	None Detected	None Detected	Equal To Background
	Ganoderma	None Detected	None Detected	Equal To Background
Sample Volume (L) 150	Myxomycetes++	None Detected	7*	Less than Background
	Pithomyces++	None Detected	None Detected	Equal To Background
	Rust	None Detected	None Detected	Equal To Background
	Scopulariopsis/Microascus	None Detected	None Detected	Equal To Background
Sample Type Inside	Stachybotrys/Memnoniella	None Detected	None Detected	Equal To Background
	Unidentifiable Spores	None Detected	None Detected	Equal To Background
	Zygomycetes	None Detected	None Detected	Equal To Background
Comments	Botryotrichum	None Detected	20	Less than Background
	Total Fungi	7440	507	6930
	Other			
	Hyphal Fragment	None Detected	None Detected	Equal To Background
	Insect Fragment	None Detected	None Detected	Equal To Background
	Pollen	10*	7*	3
Analytical Sensitivity 600x:		22	counts/cubic meter	
Analytical Sensitivity 300x *:		7*	counts/cubic meter	
Skin Fragments:		1	1 to 4 (low to high)	
Fibrous Particulate:		1	1 to 4 (low to high)	
Background:		2	1 to 4 (low to high); 5 (overloaded)	

Chaiyut Sae Lao, Laboratory Manager
 or Other Approved Signatory

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.

High levels of background particulate can obscure spores and other particulates, leading to underestimation. Background levels of 5 indicate an overloading of background particulates, prohibiting accurate detection and quantification. Present = Spores detected on overloaded samples. Results are not blank corrected unless otherwise noted. The detection limit is equal to one fungal spore, structure, pollen, fiber particle or insect fragment. "" Denotes particles found at 300X. "-" Denotes not detected. Due to method stopping rules, raw counts in excess of 100 are extrapolated based on the percentage analyzed. EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. When the information supplied by the customer can affect the validity of the result, it will be noted on the report.
 Samples analyzed by EMSL Analytical, Inc. Piscataway, NJ AIHA-LAP, LLC--EMLAP Accredited #167035

Initial report from: 02/24/2020 08:29:35

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Collected: 02/20/2020
Received: 02/20/2020
Analyzed: 02/20/2020

Proj: 20092-01 / CME, IAQ Assessment, Union Board Of Elections

Test Report: Air-O-Cell™ Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)

Lab Sample Number	Particle Identification	Sample Concentration (counts/m³)	Background Concentration (counts/m³)	Background Corrected (counts/m³)
052000850-0003	Alternaria (Ulocladium)	None Detected	None Detected	Equal To Background
	Ascospores	None Detected	40	Less than Background
	Aspergillus/Penicillium	2270	200	2070
Client Sample ID 29576317	Basidiospores	100	20	80
	Bipolaris++	None Detected	None Detected	Equal To Background
	Chaetomium	7*	None Detected	7
	Cladosporium	None Detected	220	Less than Background
Location Bathroom	Curvularia	None Detected	None Detected	Equal To Background
	Epicoccum	None Detected	None Detected	Equal To Background
	Fusarium	None Detected	None Detected	Equal To Background
	Ganoderma	None Detected	None Detected	Equal To Background
Sample Volume (L) 150	Myxomycetes++	None Detected	7*	Less than Background
	Pithomyces++	None Detected	None Detected	Equal To Background
	Rust	None Detected	None Detected	Equal To Background
	Scopulariopsis/Microascus	None Detected	None Detected	Equal To Background
Sample Type Inside	Stachybotrys/Memnoniella	7*	None Detected	7
	Unidentifiable Spores	20	None Detected	20
	Zygomycetes	None Detected	None Detected	Equal To Background
Comments	Botryotrichum	None Detected	20	Less than Background
	Total Fungi	2404	507	1900
	Other			
	Hyphal Fragment	None Detected	None Detected	Equal To Background
	Insect Fragment	None Detected	None Detected	Equal To Background
	Pollen	None Detected	7*	Less than Background
		Analytical Sensitivity 600x:	22	counts/cubic meter
	Analytical Sensitivity 300x *:	7*	counts/cubic meter	
	Skin Fragments:	2	1 to 4 (low to high)	
	Fibrous Particulate:	1	1 to 4 (low to high)	
	Background:	2	1 to 4 (low to high); 5 (overloaded)	

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.

Chaiyut Sae Lao, Laboratory Manager
or Other Approved Signatory

High levels of background particulate can obscure spores and other particulates, leading to underestimation. Background levels of 5 indicate an overloading of background particulates, prohibiting accurate detection and quantification. Present = Spores detected on overloaded samples. Results are not blank corrected unless otherwise noted. The detection limit is equal to one fungal spore, structure, pollen, fiber particle or insect fragment. "" Denotes particles found at 300X. "-" Denotes not detected. Due to method stopping rules, raw counts in excess of 100 are extrapolated based on the percentage analyzed. EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. When the information supplied by the customer can affect the validity of the result, it will be noted on the report.
Samples analyzed by EMSL Analytical, Inc. Piscataway, NJ AIHA-LAP, LLC--EMLAP Accredited #167035

Initial report from: 02/24/2020 08:29:35

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Phone: (609) 392-4200
Fax:
Collected: 02/20/2020
Received: 02/20/2020
Analyzed: 02/20/2020

Proj: 20092-01 / CME, IAQ Assessment, Union Board Of Elections

Test Report: Air-O-Cell™ Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)

Lab Sample Number	Particle Identification	Sample Concentration (counts/m³)	Background Concentration (counts/m³)	Background Corrected (counts/m³)
052000850-0004	Alternaria (Ulocladium)	None Detected	N/A	N/A
	Ascospores	40	N/A	N/A
	Aspergillus/Penicillium	200	N/A	N/A
Client Sample ID 29576245	Basidiospores	20	N/A	N/A
	Bipolaris++	None Detected	N/A	N/A
	Chaetomium	None Detected	N/A	N/A
	Cladosporium	220	N/A	N/A
Location Outside	Curvularia	None Detected	N/A	N/A
	Epicoccum	None Detected	N/A	N/A
	Fusarium	None Detected	N/A	N/A
	Ganoderma	None Detected	N/A	N/A
Sample Volume (L) 150	Myxomycetes++	7*	N/A	N/A
	Pithomyces++	None Detected	N/A	N/A
	Rust	None Detected	N/A	N/A
Sample Type Background	Scopulariopsis/Microascus	None Detected	N/A	N/A
	Stachybotrys/Memnoniella	None Detected	N/A	N/A
	Unidentifiable Spores	None Detected	N/A	N/A
Comments	Zygomycetes	None Detected	N/A	N/A
	Botryotrichum	20	N/A	N/A
	Total Fungi	507	N/A	N/A
	Other			
	Hyphal Fragment	None Detected	N/A	N/A
	Insect Fragment	None Detected	N/A	N/A
	Pollen	7*	N/A	N/A
	Analytical Sensitivity 600x:	22	counts/cubic meter	
	Analytical Sensitivity 300x *:	7*	counts/cubic meter	
	Skin Fragments:	1	1 to 4 (low to high)	
	Fibrous Particulate:	1	1 to 4 (low to high)	
	Background:	2	1 to 4 (low to high); 5 (overloaded)	

Chaoyut Sae Lao, Laboratory Manager
or Other Approved Signatory

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.

High levels of background particulate can obscure spores and other particulates, leading to underestimation. Background levels of 5 indicate an overloading of background particulates, prohibiting accurate detection and quantification. Present = Spores detected on overloaded samples. Results are not blank corrected unless otherwise noted. The detection limit is equal to one fungal spore, structure, pollen, fiber particle or insect fragment. "" Denotes particles found at 300X. "-" Denotes not detected. Due to method stopping rules, raw counts in excess of 100 are extrapolated based on the percentage analyzed. EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. When the information supplied by the customer can affect the validity of the result, it will be noted on the report.
Samples analyzed by EMSL Analytical, Inc. Piscataway, NJ AIHA-LAP, LLC--EMLAP Accredited #167035

Initial report from: 02/24/2020 08:29:35

For Information on the fungi listed in this report please visit the Resources section at www.emsl.com



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Order ID: 052000850
 Customer ID: ENVI65
 Customer PO:
 Project ID:

Attn: Dominick Dercole
 Environmental Connection, Inc.
 120 North Warren Street
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Phone: (609) 392-4200
 Fax:
 Collected: 02/20/2020
 Received: 02/20/2020
 Analyzed: 02/20/2020

Proj: 20092-01 / CME, IAQ Assessment, Union Board Of Elections

Test Report: Air-O-Cell™ Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)

	Particle Identification	Sample Concentration (counts/m ³)	Background Concentration (counts/m ³)	Background Corrected (counts/m ³)
Lab Sample Number 052000850-0005	Alternaria (Ulocladium)	None Detected	None Detected	N/A
	Ascospores	None Detected	None Detected	N/A
	Aspergillus/Penicillium	None Detected	None Detected	N/A
Client Sample ID 29576299	Basidiospores	None Detected	None Detected	N/A
	Bipolaris++	None Detected	None Detected	N/A
	Chaetomium	None Detected	None Detected	N/A
	Cladosporium	None Detected	None Detected	N/A
	Curvularia	None Detected	None Detected	N/A
Location Blank	Epicoccum	None Detected	None Detected	N/A
	Fusarium	None Detected	None Detected	N/A
	Ganoderma	None Detected	None Detected	N/A
	Myxomycetes++	None Detected	None Detected	N/A
Sample Volume (L)	Pithomyces++	None Detected	None Detected	N/A
	Rust	None Detected	None Detected	N/A
	Scopulariopsis/Microascus	None Detected	None Detected	N/A
Sample Type Blank	Stachybotrys/Memnoniella	None Detected	None Detected	N/A
	Unidentifiable Spores	None Detected	None Detected	N/A
	Zygomycetes	None Detected	None Detected	N/A
Comments	Botryotrichum	None Detected	None Detected	N/A
	Total Fungi	None Detected	None Detected	N/A
	Other			
	Hyphal Fragment	None Detected	None Detected	N/A
	Insect Fragment	None Detected	None Detected	N/A
	Pollen	None Detected	None Detected	N/A
	Analytical Sensitivity 600x:	0	counts/cubic meter	
Analytical Sensitivity 300x *:	0*	counts/cubic meter		
Skin Fragments:	1	1 to 4 (low to high)		
Fibrous Particulate:	1	1 to 4 (low to high)		
Background:	1	1 to 4 (low to high); 5 (overloaded)		

Chaoyut Sae Lao, Laboratory Manager
 or Other Approved Signatory

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.

High levels of background particulate can obscure spores and other particulates, leading to underestimation. Background levels of 5 indicate an overloading of background particulates, prohibiting accurate detection and quantification. Present = Spores detected on overloaded samples. Results are not blank corrected unless otherwise noted. The detection limit is equal to one fungal spore, structure, pollen, fiber particle or insect fragment. "" Denotes particles found at 300X. "-" Denotes not detected. Due to method stopping rules, raw counts in excess of 100 are extrapolated based on the percentage analyzed. EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. When the information supplied by the customer can affect the validity of the result, it will be noted on the report.
 Samples analyzed by EMSL Analytical, Inc. Piscataway, NJ AIHA-LAP, LLC--EMLAP Accredited #167035

Initial report from: 02/24/2020 08:29:35

For information on the fungi listed in this report please visit the Resources section at www.emsl.com

Attachment IV

Chain of Custody and Certificates of Analysis for Asbestos Bulk Sampling



EMSL Analytical, Inc.

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EMSL Order: 052000858

Customer ID: ENVI65

Customer PO: 20092-01

Project ID:

Attention: Dominick Dercole
Environmental Connection, Inc.
120 North Warren Street
Trenton, NJ 08608

Phone: (609) 462-3218

Fax:

Received Date: 02/20/2020 1:58 PM

Analysis Date: 02/21/2020

Collected Date: 02/20/2020

Project: 20092-01

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
01 <i>052000858-0001</i>	Rough Plaster	Brown Fibrous Homogeneous	HA: 01	45% Quartz 45% Ca Carbonate 8% Non-fibrous (Other)	2% Chrysotile
01A <i>052000858-0002</i>	Skim Coat	White Non-Fibrous Homogeneous	HA: 01A	15% Quartz 68% Ca Carbonate 17% Non-fibrous (Other)	None Detected
02 <i>052000858-0003</i>	Rough Plaster				Positive Stop (Not Analyzed)
02A <i>052000858-0004</i>	Skim Coat	White Non-Fibrous Homogeneous	HA: 01A	<1% Cellulose 15% Quartz 68% Ca Carbonate 17% Non-fibrous (Other)	None Detected
03 <i>052000858-0005</i>	Rough Plaster				Positive Stop (Not Analyzed)
03A <i>052000858-0006</i>	Skim Coat	White Non-Fibrous Homogeneous	HA: 01A	15% Quartz 65% Ca Carbonate 20% Non-fibrous (Other)	None Detected

Analyst(s)

Susan Pollack (4)

Chaiyut Sae Lao, Laboratory Manager
or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. The above analyses were performed in general compliance with Appendix E to Subpart E of 40 CFR (previously EPA 600/M4-82-020 "Interim Method"), but augmented with procedures outlined in the 1993 ("final") version of the method. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. All samples received in acceptable condition unless otherwise noted. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. EMSL recommends gravimetric reduction for all non-friable organically bound materials prior to analysis. Estimation of uncertainty is available on request.

Samples analyzed by EMSL Analytical, Inc. Piscataway, NJ NYS ELAP 11423, NVLAP Lab Code 101048-2, NJ NELAC 12037, Philadelphia 289, CT PH-0266

Initial report from: 02/25/2020 08:00:05



EMSL ANALYTICAL, INC.
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Asbestos Chain of Custody

EMSL Order Number (lab use only):

052000858

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200 ROUTE 130 NORTH
CINNAMINSON, NJ 08077
PHONE: (800) 220-3675
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Company Name: <u>ENVIRONMENTAL CONNECTION</u>		EMSL Customer ID: <u>EM165</u>	
Street: <u>100 N WARREN ST</u>		City: <u>TRUSTON</u>	State or Province: <u>NJ</u>
Zip/Postal Code: <u>08608</u>	Country: <u>USA</u>	Telephone #: <u>609-392-4000</u>	Fax #:
Report To (Name):		Please Provide Results via: <input type="checkbox"/> Fax <input checked="" type="checkbox"/> Email	
email Address:		Purchase Order Number: <u>20092-01</u>	
Client Project ID: <u>20092-01</u>		EMSL Project ID (internal use only):	
State or Province Collected:		CT only <input type="checkbox"/> Commercial/Taxable <input type="checkbox"/> Residential/Tax Exempt	
EMSL-Bill to: <input checked="" type="checkbox"/> Same <input type="checkbox"/> Different - If bill to is different note instructions in comment. Third party billing requires written authorization from third party			
Turnaround Time (TAT) Options Please Check			
<input type="checkbox"/> 3 Hr ¹	<input type="checkbox"/> 4-4.5Hr ¹ <small>AHERA Only</small>	<input type="checkbox"/> 6 Hr ¹	<input type="checkbox"/> 24 Hr
<input type="checkbox"/> 32 Hr ²	<input checked="" type="checkbox"/> 72 Hr	<input type="checkbox"/> 96 Hr	<input type="checkbox"/> 1 Week
<input type="checkbox"/> 2 Week			
<small>¹Premium Service Charge applies for 3 Hour TEM AHERA or EPA Level II TAT - you will be asked to sign an authorization form. TEM Air 3-6 Hour, please call ahead to schedule ²32 Hour TAT available for select tests only; samples must be submitted by 11:30 am.</small>			
PCM - Air <input type="checkbox"/> NIOSH 7400 <input type="checkbox"/> w/ OSHA 8hr. TWA PLM - Bulk (reporting limit) <input checked="" type="checkbox"/> PLM EPA 600/R-93/116 (<1%) <input type="checkbox"/> PLM EPA NOB (<1%) Point Count <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%) Point Count w/Gravimetric <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%) <input type="checkbox"/> NYS 198.1 (friable - NY) <input type="checkbox"/> NYS 198.6 NOB (non-friable-NY) <input type="checkbox"/> NYS 198.8 SOF-V <input type="checkbox"/> NIOSH 9002 (<1%)		TEM - Air¹ <input type="checkbox"/> AHERA 40 CFR, Part 763 <input type="checkbox"/> NIOSH 7402 <input type="checkbox"/> EPA Level II <input type="checkbox"/> ISO 10312 TEM - Bulk <input type="checkbox"/> TEM EPA NOB <input type="checkbox"/> NYS NOB 198.4 (non-friable-NY) <input type="checkbox"/> TEM EPA 600/R-93/116 with milling prep (<0.1%) TEM - Water: EPA 100.2 Fibers >10µm <input type="checkbox"/> Waste <input type="checkbox"/> Drinking All Fiber Sizes <input type="checkbox"/> Waste <input type="checkbox"/> Drinking	
		TEM - Settled Dust <input type="checkbox"/> Microvac - ASTM D 5755 <input type="checkbox"/> Wipe - ASTM D6480 <input type="checkbox"/> Carpet Sonication (EPA 600/J-93/167)	
		Soil - Rock - Vermiculite (reporting limit) <input type="checkbox"/> PLM EPA 600/R-93/116 with milling prep (<0.25%) <input type="checkbox"/> TEM EPA 600/R-93/116 with milling prep (<0.1%) <input type="checkbox"/> TEM Qualitative via Filtration Prep <input type="checkbox"/> TEM Qualitative via Drop Mount Prep <input type="checkbox"/> Cincinnati Method EPA 600/R-04/004 - PLM/TEM <small>*Lower reporting limits available on request</small>	
		Other test (please specify):	
<input checked="" type="checkbox"/> Stop At First Positive (clearly identify homogenous areas below)		Filter Pore Size (Air Samples): <input type="checkbox"/> 0.8µm <input type="checkbox"/> 0.45µm	
Sampler's Name: <u>DOM DeRode</u>		Sampler's Signature:	
Sample #	Sample Description/Location	Volume, Area or Homogenous Area	Date/Time Sampled
<u>01/01A DD022000</u>	<u>POUSH PLASTER / SKIM COAT</u>	<u>0.1/1A</u>	<u>2/20/20</u>
<u>02/01A DD022000</u>	<u>POUSH PLASTER / SKIM COAT</u>	<u>0.1/1A</u>	<u>2/20/20</u>
<u>03/01A DD022000</u>	<u>POUSH PLASTER / SKIM COAT</u>	<u>0.1/1A</u>	<u>2/20/20</u>
Client Sample # (s): <u>01/01A DD022000 - 03/01A DD022000</u>		Total # of Samples: <u>6</u>	
Relinquished by (Client):		Date: <u>2/20/20</u>	Time: <u>1400</u>
Received by (Lab):		Date:	RECEIVED
Comments/Special Instructions:			
FEB 20 2020 BY <u>CAW</u> EMSL PISCATAWAY 158pm			



EMSL Analytical, Inc.

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Phone: (609) 462-3218

Fax:

Received Date: 03/19/2020 2:25 PM

Analysis Date: 03/19/2020

Collected Date: 03/19/2020

Project: 20092-02 / CME, ACM Inspection Union Elections - Basement

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
01DD031920 <i>052001622-0001</i>	Break Room - 2'x4' Dot / Squiggle CT	Gray Fibrous Homogeneous	8% Cellulose 60% Min. Wool	20% Perlite 12% Non-fibrous (Other)	None Detected
02DD031920 <i>052001622-0002</i>	Basement Bathroom - 2'x4' Dot / Squiggle CT	Gray Fibrous Homogeneous	24% Cellulose 48% Min. Wool	15% Perlite 13% Non-fibrous (Other)	None Detected
03DD031920 <i>052001622-0003</i>	Break Room - Sheetrock	Brown/Tan Fibrous Homogeneous	12% Cellulose	75% Gypsum 13% Non-fibrous (Other)	None Detected
04DD031920 <i>052001622-0004</i>	Break Room - Sheetrock	Brown/Tan Fibrous Homogeneous	8% Cellulose	80% Gypsum 12% Non-fibrous (Other)	None Detected
03ADD031920 <i>052001622-0005</i>	Break Room - Joint Compound	Tan Non-Fibrous Homogeneous	2% Cellulose	80% Ca Carbonate 18% Non-fibrous (Other)	<1% Chrysotile
04ADD031920 <i>052001622-0006</i>	Break Room - Joint Compound	Tan Non-Fibrous Homogeneous	<1% Cellulose	80% Ca Carbonate 20% Non-fibrous (Other)	<1% Chrysotile
05DD031920-Floor Tile 1 <i>052001622-0007</i>	Break Room - Double Layer VFT / Mastic 12x12 / 9x9	Blue Non-Fibrous Homogeneous		70% Ca Carbonate <1% Mica 30% Non-fibrous (Other)	None Detected
05DD031920-Floor Tile 2 <i>052001622-0007A</i>	Break Room - Double Layer VFT / Mastic 12x12 / 9x9	Gray Non-Fibrous Homogeneous		70% Ca Carbonate 30% Non-fibrous (Other)	None Detected
05DD031920-Floor Tile 3 <i>052001622-0007B</i>	Break Room - Double Layer VFT / Mastic 12x12 / 9x9	Green Non-Fibrous Homogeneous		65% Ca Carbonate 31% Non-fibrous (Other)	4% Chrysotile
05ADD031920 <i>052001622-0008</i> <i>Inseperable Mastics</i>	Break Room - Double Layer VFT / Mastic 12x12 / 9x9	Tan/Black Non-Fibrous Heterogeneous	2% Cellulose	15% Ca Carbonate 83% Non-fibrous (Other)	None Detected
06DD031920-Floor Tile 1 <i>052001622-0009</i>	Paper Closet - Double Layer VFT / Mastic 12x12 / 9x9	Blue Non-Fibrous Homogeneous		70% Ca Carbonate <1% Mica 30% Non-fibrous (Other)	None Detected
06DD031920-Floor Tile 2 <i>052001622-0009A</i>	Paper Closet - Double Layer VFT / Mastic 12x12 / 9x9	Gray Non-Fibrous Homogeneous	2% Cellulose	65% Ca Carbonate 33% Non-fibrous (Other)	None Detected
06DD031920-Floor Tile 3 <i>052001622-0009B</i>	Paper Closet - Double Layer VFT / Mastic 12x12 / 9x9				Positive Stop (Not Analyzed)
06ADD031920 <i>052001622-0010</i> <i>Inseperable Mastics</i>	Paper Closet - Double Layer VFT / Mastic 12x12 / 9x9	Tan/Black Non-Fibrous Heterogeneous	4% Cellulose	10% Ca Carbonate 86% Non-fibrous (Other)	None Detected

Initial report from: 03/19/2020 19:11:53



EMSL Analytical, Inc.

1056 Stelton Road Piscataway, NJ 08854

Tel/Fax: (732) 981-0550 / (732) 981-0551

<http://www.EMSL.com> / piscatawaylab@emsl.com

EMSL Order: 052001622

Customer ID: ENVI65

Customer PO:

Project ID:

Analyst(s)

Colin Slattery (13)

Chaiyut Sae Lao, Laboratory Manager
or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. The above analyses were performed in general compliance with Appendix E to Subpart E of 40 CFR (previously EPA 600/M4-82-020 "Interim Method"), but augmented with procedures outlined in the 1993 ("final") version of the method. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. All samples received in acceptable condition unless otherwise noted. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. EMSL recommends gravimetric reduction for all non-friable organically bound materials prior to analysis. Estimation of uncertainty is available on request.

Samples analyzed by EMSL Analytical, Inc. Piscataway, NJ NYS ELAP 11423, NVLAP Lab Code 101048-2, NJ NELAC 12037, Philadelphia 289, CT PH-0266

Initial report from: 03/19/2020 19:11:53



EMSL Analytical, Inc.

1056 Stelton Road Piscataway, NJ 08854
Tel/Fax: (732) 981-0550 / (732) 981-0551
<http://www.EMSL.com> / piscatawaylab@emsl.com

EMSL Order: 052001622
Customer ID: ENVI65
Customer PO:
Project ID:

Attention: Dominick Dercole
Environmental Connection, Inc.
120 North Warren Street
Trenton, NJ 08608

Phone: (609) 462-3218
Fax:
Received Date: 03/19/2020 2:25 PM
Analysis Date: 03/21/2020
Collected Date: 03/19/2020

Project: 20092-02 / CME, ACM Inspection Union Elections - Basement

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by TEM via EPA/600/R-93/116 Section 2.5.5.1

Sample ID	Description	Appearance	% Matrix Material	% Non-Asbestos Fibers	Asbestos Types
05DD031920-Floor Tile 1 052001622-0007	Break Room - Double Layer VFT / Mastic 12x12 / 9x9	Blue Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
05DD031920-Floor Tile 2 052001622-0007A	Break Room - Double Layer VFT / Mastic 12x12 / 9x9	Gray Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
05ADD031920 052001622-0008	Break Room - Double Layer VFT / Mastic 12x12 / 9x9	Tan/Black Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected

Analyst(s)

Nicholas Maslowski (3)

Chaiyut Sae Lao, Laboratory Manager
or other approved signatory

This laboratory is not responsible for % asbestos in total sample when the residue only is submitted for analysis. The above report relates only to the items tested. This report may not be reproduced, except in full, without written approval by EMSL Analytical, Inc. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

Samples analyzed by EMSL Analytical, Inc. Piscataway, NJ NYS ELAP 11423, NJ NELAC 12037

Initial report from: 03/23/2020 07:23:51

052001622



ENVIRONMENTAL CONNECTION INC

A Vertical Technologies Corporation

Client: CME
 Project: ACM Inspection -
 Building: UMON ELECTIONS - BASEMENT

Date: 3/19/20
 Technician: D. DeRosa
 Project #: 20092-02

ASBESTOS ANALYSIS OF BULK MATERIALS via EPA600/R-93/116

SAMPLE # LAB #	LOCATION	MATERIAL TYPE	QUANTITY	ANALYSIS REQUESTED (PLM or TEM-NOB)
01 DD031920	BREATH ROOM	2'x4' dot/squishle CT		PLM
02 DD031920	BASEMENT BATH ROOM	2'x4' dot/squishle CT		PLM
03 DD031920	BREAK ROOM	Sheet rock		PLM
04 DD031920	BREAK ROOM	Sheet rock		PLM
03A DD031920	BREAK ROOM	JOINT Compound		PLM
04A DD031920	BREAK ROOM	JOINT Compound		PLM
05/05A DD031920	BREATH ROOM	DOUBLE LAYER VFI/MASTIC ^{12x12} / _{9x9}		PLM → TEM
06/06B DD031920	PAPER CLOSET	DOUBLE LAYER VFI/MASTIC ^{12x12} / _{9x9}		PLM
				RECEIVED
				MAR 19 2020 WALW

- CHECK EACH BOX THAT APPLIES**
- Point Count Sample If <10% Asbestos By Weight For PLM
 - TEM Analysis Where Requested
 - 3 hr. TAT
 - 6 hr. TAT
 - 48 hr. TAT
 - Stop At First Positive
 - Homogeneous Material/Code
 - Other 24 Hours

BY: [Signature] 1425
 EMSI PISCATAWAY

CHAIN OF CUSTODY RECORD (CCR)

RELINQUISHED BY	DATE	TIME	RECEIVED BY:	DATE	TIME	REASON FOR CCR
<u>[Signature]</u>	3/19/20	1445				

COMMENTS: _____

CONTACT PERSON: _____ TELEPHONE #: 609-392-4200

Attachment V

Remediation Drawing

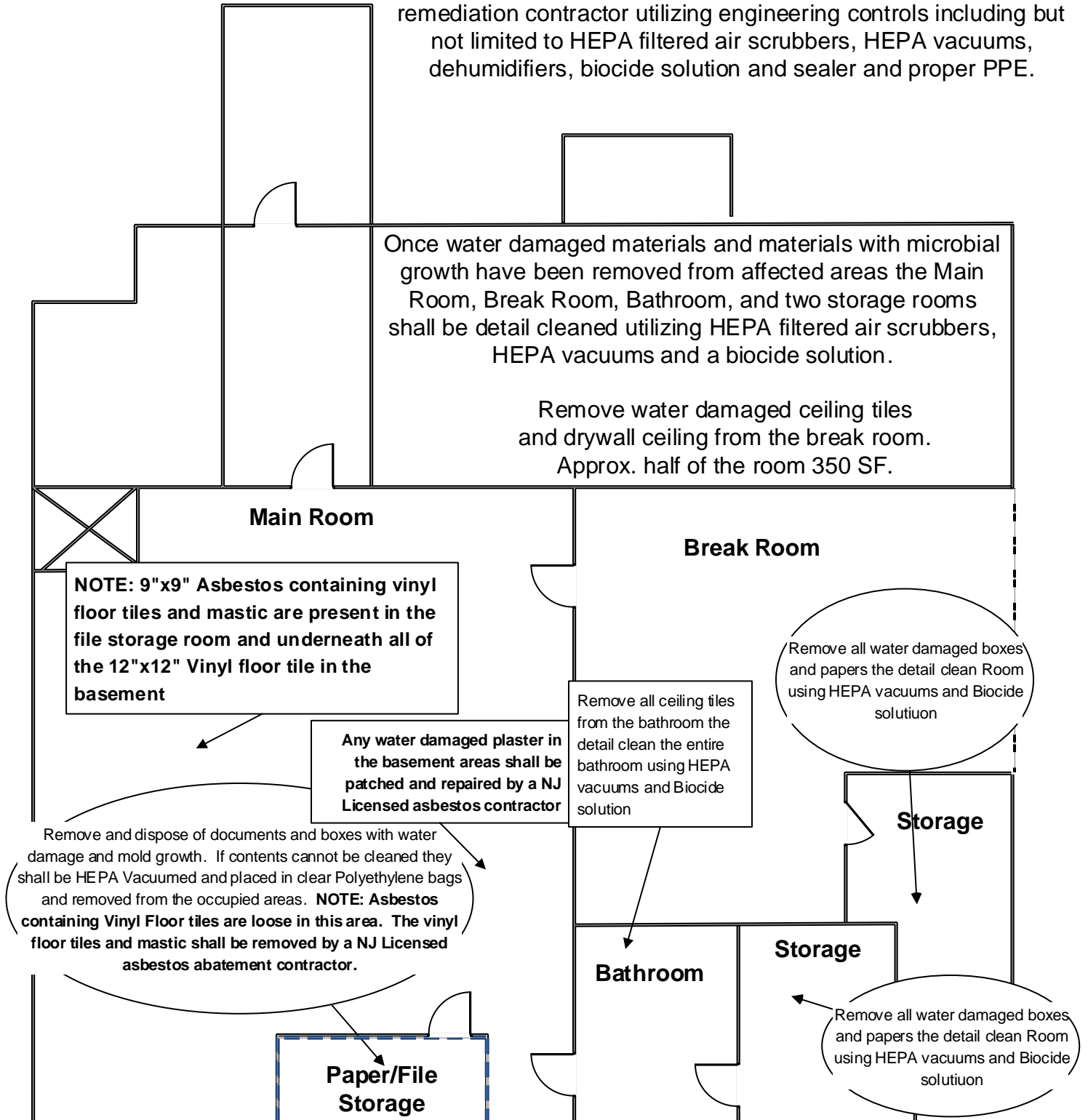


Union Election Headquarters-Basement

All water damaged and moldy building materials including porous damaged contents such as cardboard boxes and papers which are damaged, shall be removed by a qualified microbial remediation contractor utilizing engineering controls including but not limited to HEPA filtered air scrubbers, HEPA vacuums, dehumidifiers, biocide solution and sealer and proper PPE.

Once water damaged materials and materials with microbial growth have been removed from affected areas the Main Room, Break Room, Bathroom, and two storage rooms shall be detail cleaned utilizing HEPA filtered air scrubbers, HEPA vacuums and a biocide solution.

Remove water damaged ceiling tiles and drywall ceiling from the break room. Approx. half of the room 350 SF.



--- Remove all Drywall from floor to ceiling. Approx. 175 SF

--- Remove wood paneling from floor to ceiling. Approx. 300 SF

Attachment VI

Certifications/Accreditations

56109

NAETI Inc.

CERTIFICATE OF COMPLETION

AHERA/EPA Accredited Per 40 CFR Part 763
Asbestos Accreditation under TSCA Title II

This is to certify that

Dominick Dercole

Successfully completed the course entitled

**1/2-Day New York State/EPA/AHERA Asbestos Building Inspector Annual Refresher on
November 4, 2019**

Examination Passed on November 4, 2019

Expiration Date on November 4, 2020

Lee Wasserman
President, NAETI Inc.

Per 10 NYCRR Part 73.2 (L) (1), DOH 2832 Certificate of Completion of Asbestos
Safety Training is the only official record of training for N.Y.S. students.

Language: English

ABIH 1/2 CM POINT

3321 Doris Avenue, Building B, Ocean, NJ 07712

Phone (732) 531-5571

Fax (732) 531-5956

www.naeti.com

United States Department of Commerce
National Institute of Standards and Technology



Certificate of Accreditation to ISO/IEC 17025:2017

NVLAP LAB CODE: 101048-2

EMSL Analytical, Inc.
Piscataway, NJ

*is accredited by the National Voluntary Laboratory Accreditation Program for specific services,
listed on the Scope of Accreditation, for:*

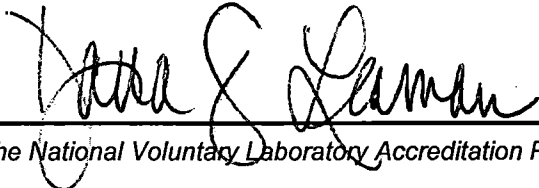
Asbestos Fiber Analysis

*This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017.
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality
management system (refer to joint ISO-ILAC-IAF Communique dated January 2009).*

2019-07-01 through 2020-06-30

Effective Dates




For the National Voluntary Laboratory Accreditation Program



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

EMSL Analytical, Inc.
1056 Stelton Rd.
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Email: cshelao@emsl.com
<http://www.emsl.com>

ASBESTOS FIBER ANALYSIS

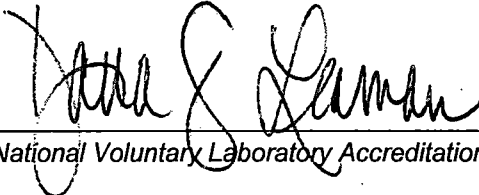
NVLAP LAB CODE 101048-2

Bulk Asbestos Analysis

<u>Code</u>	<u>Description</u>
18/A01	EPA -- 40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples
18/A03	EPA 600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials

Airborne Asbestos Analysis

<u>Code</u>	<u>Description</u>
18/A02	U.S. EPA's "Interim Transmission Electron Microscopy Analytical Methods-Mandatory and Nonmandatory-and Mandatory Section to Determine Completion of Response Actions" as found in 40 CFR, Part 763, Subpart E, Appendix A.



For the National Voluntary Laboratory Accreditation Program

APPENDIX 2

BACKGROUND CHECK REQUIREMENTS

1. It is the requirement of the County of Union that ALL contractors (both General Contractors and their sub-contractors) and their personnel be vetted through a fingerprint based background check process prior to being permitted entry into the County facility(s) and the commencement of the proposed work.
2. It is the responsibility of the General Contractor or vendor in charge, to make sure that all personnel who will be working in and around the County facility contact the State of New Jersey, Department of Law & Public Safety, Division of State Police Criminal Information Unit at (609) 822-2000, Ext. 2918 or visit their website at <https://njsp.org/criminal-history-records/> and follow the instructions to obtain a copy of each person's "Individual Criminal History Record".

PLEASE NOTE: ALL FEES & TIME ASSOCIATED IN COMPLETING THIS PROCESS ARE THE SOLE RESPONSIBILITY OF THE APPLICANT AND/OR THEIR AFFILIATES (E.G. GENERAL CONTRACTOR AND/OR SUBCONTRACTORS).

Once obtained, original sealed records (no copies) shall be sent/delivered to the Union County Sheriff's Office at the following address:

Union County Sheriff's Office
2 Broad Street, Control Center
Elizabeth, NJ 07207
908-527-4440

3. Upon completion of the review and processing of the information received, the Union County Sheriff's Office will issue identification cards to all contractors' personnel authorized in to the County facility to conduct work activities. It is the responsibility of the General Contractor or vendor in charge of the proposed work to maintain a current and accurate list of any and all screened and approved personnel with the Union County Sheriff's Office.
4. **THE COUNTY OF UNION SHALL NOT BE RESPONSIBLE FOR ANY DELAYS AND/OR DAMAGES EITHER DIRECTLY OR INDIRECTLY RESULTING FROM THE FAILURE TO COMPLY WITH THESE REQUIREMENTS BY ANY GENERAL CONTRACTOR OR VENDOR IN CHARGE.**

GENERAL NOTES

1. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO SUBMITTING HIS BID ON THE PROJECT.

2. THE CONTRACTOR SHALL SUBMIT WITH THEIR BID REFERENCES FROM AT LEAST THREE COMPLETED PROJECTS INVOLVING SIMILAR INSTALLATIONS TO THOSE REQUIRED UNDER THIS CONTRACT WITHIN IN THE PAST FIVE YEARS .

3. THE CONTRACTOR'S BID PRICE SHALL INCLUDE ALL LABOR AND MATERIALS AND COST, TO PERFORM ALL OF THE REQUIRED WORK. PRIOR TO SUBMITTING HIS PROPOSAL, THE CONTRACTOR SHALL CONDUCT A CAREFUL INSPECTION OF THE AREAS AFFECTED BY THE WORK IN ORDER TO BECOME THOROUGHLY FAMILIAR WITH EXISTING CONDITIONS AND WITH ALL ISSUES HE/SHE MAY ENCOUNTER DURING THE PERFORMANCE OF THE WORK. SUBMISSION OF HIS/HER PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH AN INSPECTION WAS CONDUCTED AND THAT CLAIMS FOR EXTRAS DURING THE COURSE OF THE WORK WILL NOT BE RECOGNIZED FOR ANY DIFFICULTIES ENCOUNTERED, THAT THE CONTRACTOR SHOULD HAVE ANTICIPATED.

4. THE CONTRACTOR SHALL BE RESPONSIBLE TO REMOVE AND REPLACE ALL DAMAGED EQUIPMENT AND MATERIALS WHETHER OR NOT SHOWN ON THE DRAWINGS AND/ OR CALLED FOR IN THE SPECIFICATIONS.

5. ALL BUILDING SYSTEMS SHALL BE TESTED AND SHALL BE DETERMINED TO BE FULLY FUNCTIONAL CODE COMPLIANT AND INSTALLED AS SHOWN ON THE DRAWINGS AND CALLED FOR IN THE SPECIFICATIONS.

6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ASCERTAINING THE EXACT DIMENSIONS AND LOCATIONS OF ALL EQUIPMENT AND FOR CHECKING OUT ALL REQUIRED CLEARANCES.

7. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL EQUIPMENT AND BUILDING MATERIALS REQUIRED FOR A FULLY REPAIRED AND RESTORED FACILITY.

8. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING EQUIPMENT AND SYSTEM ARRANGEMENTS PRIOR TO COMMENCING ANY WORK.

9. CONTRACTOR SHALL PROVIDE FULL TIME ON SITE SUPERVISION FOR THE ENTIRE DURATION OF HIS/HER WORK.

10. ALL WORK SHALL BE PERFORMED BY TRAINED AND EXPERIENCED PERSONNEL AND SUPERVISORS, WHO ARE THOROUGHLY FAMILIAR WITH THE REQUIREMENTS OF THE ENTIRE INSTALLATION ON THIS PROJECT. WORKMANSHIP SHALL BE OF THE HIGHEST GRADE.

11. ALL WORK, WHETHER SHOWN OR IMPLIED ON THE DRAWINGS, OR CALLED FOR IN THE SPECIFICATIONS, AND UNLESS SPECIFICALLY QUESTIONED PRIOR TO THE BID, SHALL BE CONSIDERED TO BE FULLY UNDERSTOOD IN ALL RESPECTS BY THE CONTRACTOR AND HE/SHE SHALL BE FULLY RESPONSIBLE FOR ANY MISINTERPRETATIONS THEREOF.

12. THE CONTRACTOR MAY SUBMIT TO THE ENGINEER, FOR CONSIDERATION AND APPROVAL, ANY SUGGESTIONS THAT MAY IMPROVE THE FINAL PROJECT RESULT; WHILE MAINTAINING FULL COMPLIANCE WITH THE DESIGN INTENT. NOT THE ENGINEER NOR UNION COUNTY WILL BE RESPONSIBLE FOR ANY ASSUMPTIONS MADE BY THE CONTRACTOR.

13. THE CONTRACTOR SHALL PROVIDE ADEQUATE TEMPORARY LIGHTING DURING CONSTRUCTION, INCLUDING ALL OTHER RELATED ACTIVITIES. ILLUMINATION INTENSITIES SHALL MEET AT A MINIMUM OSHA STANDARDS. LIGHTING SHALL BE MAINTAINED AT ALL TIMES TO ENSURE SAFETY AND WORK QUALITY. ALL TEMPORARY SERVICES REQUIRED TO MAINTAIN COUNTY OPERATIONS DURING AND AFTER DEMOLITION SHALL BE THE FULL RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR PROVIDING ALL TEMPORARY POWER AND LIGHTING REQUIRED FOR ALL TRADES.

14. WITHOUT APPROVAL BY THE UNION COUNTY ENGINEERING DEPARTMENT THE CONTRACTOR SHALL NOT INTERRUPT UTILITY SERVICE TO THE FACILITY, OR WITHIN THE FACILITY, WHETHER THESE SHUTDOWNS AND CONNECTIONS ARE MADE DURING OR AFTER NORMAL WORKING HOURS, WEEKENDS, OR HOLIDAYS. ARRANGE WITH THE COUNTY'S REPRESENTATIVE FOR THE TIME AND DURATION OF INTERRUPTIONS OF SERVICE. THE CONTRACTOR SHALL PROVIDE TEMPORARY POWER REQUIRED TO MAINTAIN BUILDING SERVICES AT ALL TIMES.

15. THE CONTRACTOR SHALL SUBMIT COMPLETE WORKING DRAWINGS AND STAGING PLANS FOR REVIEW. DRAWINGS WILL SHOW EXISTING EQUIPMENT AND MATERIALS, AND ALL EQUIPMENT AFFECTED AND /OR REMOVED BY THIS WORK,

AND PLANS FOR ALL NEW EQUIPMENT AND MATERIALS TO BE INSTALLED UNDER THIS CONTRACT. DRAWINGS MUST BE SUBMITTED BEFORE CONSTRUCTION STARTS.

16. ANY EXISTING AREA(S) DAMAGED AS A RESULT OF PERFORMING WORK UNDER THIS CONTRACT SHALL BE REPAIRED AND/OR REPLACED AS REQUIRED AT THE CONTRACTOR'S EXPENSE WITH NO ADDITIONAL COST TO THE COUNTY. MATERIALS AND FINISHES SHALL MATCH EXISTING TO THE SATISFACTION OF THE COUNTY'S ENGINEERING DEPARTMENT. THE INSTALLATION OF ALL WORK INDICATED ON THE CONTRACT DRAWINGS AND/OR IN THE SPECIFICATIONS SHALL COMPLY WITH APPLICABLE CODES.

17. THE WORK SHALL COMPLY WITH THE CURRENT REQUIREMENTS OF THE NEW JERSEY UNIFORM CONSTRUCTION CODE (NJUCC), NEW JERSEY UNIFORM FIRE CODE (NJUFC), NATIONAL ELECTRICAL CODE (NEC), NATIONAL ELECTRICAL SAFETY CODES (NESC), AMERICAN ELECTRICIANS HANDBOOK, (IBC) NATIONAL BUILDING CODE, (IBC) ENERGY CONSERVATION CODE, STANDARDS OF THE NATIONAL BOARD OF UNDERWRITERS, OSHA, AMERICANS WITH DISABILITIES ACT (ADA), THE BUILDING MANAGEMENT STANDARDS, AND ALL AUTHORITIES HAVING JURISDICTION. THE CONTRACTOR SHALL SECURE ALL CERTIFICATES AND PERMITS OF REQUIRED ORDINANCES, AND DELIVER THEM TO THE COUNTY PRIOR TO PERFORMING ANY WORK.

18. THE CONTRACTOR SHALL COORDINATE WITH UNION COUNTY, THE USE OF CRANES OR HOISTS FOR EQUIPMENT, IF REQUIRED, TO MINIMIZE IMPACT ON THE REGULAR OPERATION OF THE BUILDING AND IT'S GROUNDS. THE CONTRACTOR SHALL COORDINATE WITH THE BOROUGH FOR ANY STREET CLOSINGS, CRANE PLACEMENTS, ETC. AND SHALL OBTAIN AND PAY FOR ANY RELATED PERMITS. ALL COSTS FOR THE USE OF CRANES SHALL BE INCLUDED IN BASE BID, INCLUDING WORK OUTSIDE NORMAL BUSINESS HOURS.

19. CONTRACTOR SHALL VERIFY THE EXACT LOCATIONS OF EXISTING UNDERGROUND SERVICES (I.E. STORM, SEWER, HEATING, PRIMARY AND SECONDARY ELECTRIC, ETC.) WHETHER OR NOT SHOWN ON THE DRAWINGS BEFORE ANY EXCAVATION IS STARTED TO DETERMINE EXACT LOCATION OF ALL EXISTING SERVICES BY USE OF TRACING EQUIPMENT OR OTHER APPROPRIATE EQUIPMENT TO MARK AND PROTECT ALL EXISTING SERVICE LINES. CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY DAMAGE TO EXISTING UNDERGROUND SERVICES. ALL DISTURBED SURFACES SHALL BE RESTORED TO THE ORIGINAL CONDITIONS.

20. CONTRACTOR SHALL OBTAIN ALL PERMITS REQUIRED. THE CONTRACTOR SHALL HAVE ALL WORK INSPECTED FOR CODE, COMPLIANCE, AND SHALL PAY ALL FEES FOR PERMITS, INSPECTIONS AND CERTIFICATIONS. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY UPGRADES NECESSARY TO OBTAIN SAID INSPECTION APPROVALS.

21. WHENEVER A CONFLICT OCCURS BETWEEN THE CONTRACT DRAWINGS, AND THE SPECIFICATIONS, AND THE REQUIREMENTS OF ACTUAL FIELD CONDITIONS, THE CONTRACTOR SHALL BID ON THE MOST EXPENSIVE METHOD OF CONSTRUCTION AND WILL NOT BE ENTITLED TO ANY ADDITIONAL COSTS.

22. THE CONTRACTOR SHALL CAREFULLY DISCONNECT, REMOVE AND TURN OVER TO UNION COUNTY ALL EQUIPMENT AND APPURTENANCES UNDER HIS/HER CONTRACT. ANY OF THE SUBJECT MATERIAL REFUSED BY THE COUNTY SHALL BECOME THE PROPERTY OF THE CONTRACTOR TO BE PROPERLY DISPOSED OF AT NO EXTRA COST.

23. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF DEBRIS GENERATED BY HIS/HER WORK AND WORKERS, AT THE END OF EACH WORKING DAY. HE/SHE SHALL TRANSPORT ALL DEBRIS OFF-SITE LEGALLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR A DAILY GENERAL CLEANING TO MAINTAIN A SAFE WORKING ENVIRONMENT. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY REFUSE CONTAINERS.

24. ALL EQUIPMENT AND MATERIALS USED ON THE PROJECT SHALL BE NEW.

25. ALL MANUFACTURED ARTICLES, MATERIALS AND EQUIPMENT SHALL BE SUPPLIED, INSTALLED, CONNECTED, ERECTED, USED, CLEANED AND CONDITIONED AS DIRECTED BY THE RESPECTIVE MANUFACTURERS, AND/OR AS CALLED FOR IN THE SPECIFICATIONS.

26. NO SUBSTITUTION OF MATERIALS WILL BE ALLOWED WITHOUT THE WRITTEN APPROVAL OF UNION COUNTY.

27. THE CONTRACTOR SHALL MAINTAIN THE LATEST UPDATED SET OF APPROVED WORKING DRAWINGS AND CONTRACT DOCUMENTS AT THE JOBSITE AT ALL TIMES.

28. THE CONTRACTOR SHALL PROVIDE ALL ITEMS, EQUIPMENT AND LABOR NECESSARY FOR THE COMPLETION OF THE WORK SHOWN ON THE CONTRACT DOCUMENTS AND/OR CALLED FOR IN THE SPECIFICATIONS, INCLUDING PURCHASES, DELIVERIES ARRANGEMENTS, AND STORAGE.

29. EQUIPMENT NOTED AS EXISTING OR NOT PART OF THE WORK SHALL REMAIN AND SHALL BE PROTECTED. ALL EQUIPMENT, WALLS, FLOORS, ETC DISTURBED OR DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF UNION COUNTY , AND SHALL BE PERFORMED AT THE CONTRACTOR'S EXPENSE.

30. SHOULD UNFORESEEN CONDITIONS BE ENCOUNTERED, THAT AFFECT THE DESIGN AND/OR PROJECT FUNCTIONALITY , CONTRACTOR SHALL INVESTIGATE FULLY AND SHALL CONTACT THE ENGINEER, AND WHILE AWAITING RESPONSE, HE/ SHE SHALL RESCHEDULE OPERATIONS IF NECESSARY, TO AVOID DELAY OF THE OVERALL PROJECT.

31. NOTES ON EVERY DRAWINGS SHALL APPLY TO ENTIRE SET OF DRAWINGS.

32. SPECIFICATIONS MAY REQUIRE WORK, EQUIPMENT, SYSTEMS, METHODS, ETC. THAT ARE NOT INDICATED ON THE DRAWINGS.CONTRACTOR SHALL PROVIDE SAME AT NO ADDITIONAL COST.

33. DRAWINGS AND SPECIFICATIONS ARE INTENDED TO BE COMPLIMENTARY OF EACH OTHER. WHERE DISCREPANCIES OR CONFLICTS OCCUR, THE CONTRACTOR SHALL INCLUDE THE MORE COSTLY METHOD IN HIS BID.

34. ALL EQUIPMENT SHALL BE FURNISHED AND INSTALLED AS INDICATED, OR AS ACCEPTED BY THE ENGINEER.

35. UPON COMPLETION OF THE WORK, AND PRIOR TO FINAL ACCEPTANCE OF THE PROJECT THE CONTRACTOR SHALL PROVIDE ONE SET OF REPRODUCIBLE CONTRACT PLANS THAT HAVE BEEN REVISED AND ANNOTATED TO REFLECT THE "AS-BUILT" CONDITIONS OF THE PROJECT, SIGNED AND SEALED BY A NJ PROFESSIONAL ENGINEER.

36. CONTRACTOR SHALL GUARANTEE ALL WORK IN WRITING, TO UNION COUNTY AGAINST ANY AND ALL DEFECTS IN MATERIAL AND WORKMANSHIP, FOR A PERIOD OF TWO YEARS FROM THE DATE OF ACCEPTANCE, AND SHALL PERFORM ALL NECESSARY CORRECTIVE WORK AT NO EXTRA COST.

37. THE CONTRACTOR SHALL PROVIDE LABOR AND MATERIALS REQUIRED FOR THE INSTALLATION AND MAINTENANCE OF TEMPORARY LIGHTING. THE CONTRACTOR SHALL PROVIDE, CONNECT AND MAINTAIN A DIESEL OR GASOLINE DRIVEN GENERATOR IF NECESSARY. THE MINIMUM SIZE OF THE GENERATOR SHALL BE EQUAL IN SIZE TO THE LOAD REQUIRED. THE GENERATOR WILL SUPPLY THE NECESSARY ELECTRIC POWER FOR ALL TEMPORARY LIGHTING, NORMAL AND SECURITY LIGHTING, HEATING EQUIPMENT, ETC.

38. DRAWINGS ARE NOT TO BE SCALED, CONTRACTOR'S FIELD MEASUREMENTS SHALL GOVERN.

39. THE WORK WILL HAVE TO BE PERFORMED WHILE THE BUILDING REMAINS FULLY OCCUPIED AND FUNCTIONAL- IT MEANS NIGHTS AND WEEKEND WORK MAY BE REQUIRED.

40. THE VARIOUS DISCIPLINES NEEDED AS WELL AS THE REMOVALS AND THE NEW WORK WILL HAVE TO BE COORDINATED IN SUCH A FASHION THAT ALL SYSTEMS AND UTILITIES REMAIN OPERATIONAL AT ALL TIMES.

41. THE DURATION OF THE PROJECT MAY VARY SOMEWHAT (BUT REALISTICALLY NOT MUCH) DEPENDING ON THE SUBCONTRACTORS ACCESSIBILITY IN AND OUT OF THE BUILDING.

42. CONTRACTOR SHALL SUBMIT INSTALLATION DRAWINGS SHOWING HOW HE PLANS TO INSTALL PIPING SYSTEMS FOR STORMS DRAINS AND SEWAGE PIPING.

43. CONTRACTOR SHALL BE RESPONSIBLE FOR ASCERTAINING THE EXACT DIMENSIONS AND LOCATIONS OF ALL EQUIPMENT AND FOR CHECKING OUT ALL REQUIRED CLEARANCES.

44. CONTRACTOR MAY SUBMIT TO THE COUNTY ENGINEER FOR CONSIDERATION AND APPROVAL ANY SUGGESTIONS THAT MAY IMPROVE THE FINAL PROJECT RESULTS; AND WHILE MAINTAINING FULL COMPLIANCE WITH THE DESIGN INTENT. THE COUNTY WILL NOT BE RESPONSIBLE FOR ANY ASSUMPTIONS MADE BY THE CONTRACTOR.

45. CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF EXISTING UNDERGROUND SERVICES (I.E. STORM , SEWER, HEATING, PRIMARY AND SECONDARY ELECTRIC, ETC.) WHETHER OR NOT SHOWN ON THE DRAWINGS BEFORE ANY EXCAVATION IS STARTED TO DETERMINE EXACT LOCATION OF ALL EXISTING SERVICES BY USE TRACING EQUIPMENT TO MARK AND PROTECT ALL EXISTING SERVICE LINES. CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY DAMAGE TO EXITING UNDERGROUND SERVICES.

46. THE CONTRACTOR SHALL PREPARE "SHOP DRAWINGS" FOR ALL DISCIPLINES AND SHALL SUBMIT FOR ENGINEER'S APPROVAL. NO EQUIPMENT, EQUIPMENT COMPONENTS, NOR MISCELLANEOUS DEVICES SHALL BE INSTALLED WITHOUT ENGINEER'S APPROVAL.

47. THE CONTRACTOR SHALL PREPARE "WORKING DRAWINGS" AND SHALL SUBMIT TO THE ENGINEER FOR REVIEW. NO WORK SHALL BE PERFORMED WITHOUT PRIOR ENGINEER'S ACCEPTANCE OF THE "WORKING DRAWINGS".

48. THE CONTRACTOR SHALL BE RESPONSIBLE TO FURNISH AND INSTALL ALL WIRING, EQUIPMENT AND MATERIALS REQUIRED FOR FULLY FUNCTIONAL AND CODE COMPLIANT SYSTEM, WHICH MEET OBJECTIVES. THE WORK INCLUDES, WIRING AND CONDUITS BETWEEN UNITS, AND ALL DEVICES AND EQUIPMENT NOT SHOWN ON THE DRAWINGS, NOR STIPULATED IN THE SPECIFICATIONS, BUT WHICH ARE REQUIRED FOR COMPLETE AND FULLY OPERATIONAL INSTALLATIONS.

SYMBOLS AND ABBREVIATIONS

SYMBOLS	ABBRV	DESCRIPTION
	C.O.	PIPE CLEANOUT
	FD	FLOOR DRAIN
	HT	HOUSE TRAP
	BWV	BACKWATER VALVE
		UNDERGROUND PIPE
		DIRECTIONAL FLOW
		NEW PVC PIPE
	SD	STORM DRAIN
	RD	ROOF DRAIN
	L	VERTICAL STORM LEADER
	S	SEWAGE PIPE

DRAWING LIST

DWG No.	
G-1	GENERAL NOTES
OV-1	WORK OVERVIEW, BASEMENT
DE-1	BASEMENT FLOOR PLAN, DEMOLITION
RE-2	RESTORATION, BASEMENT FLOOR PLAN (I)
E-1	RESTORATION, ELECTRICAL BASEMENT FLOOR PLAN (II)
PL-1	UPGRADE, PLUMBING BASEMENT FLOOR PLAN
RE-1	RESTORATION, 1ST FLOOR PLAN
STR-1	UPGRADE, STRUCTURAL BASEMENT FLOOR PLAN
AR-1	ASBESTOS REMOVAL BASEMENT FLOOR PLAN
S-1	SIDEWALK REPAIRS

REVISIONS				
No.	DATE	DESCRIPTION	CKD.	APP'D.

1609 Vauxhall Road, Suite 206
Union, NJ 07083
Tel: (908)258-7943

LUIS C. AGUERO, P.E.
NJ PROFESSIONAL ENGINEER No. 23069



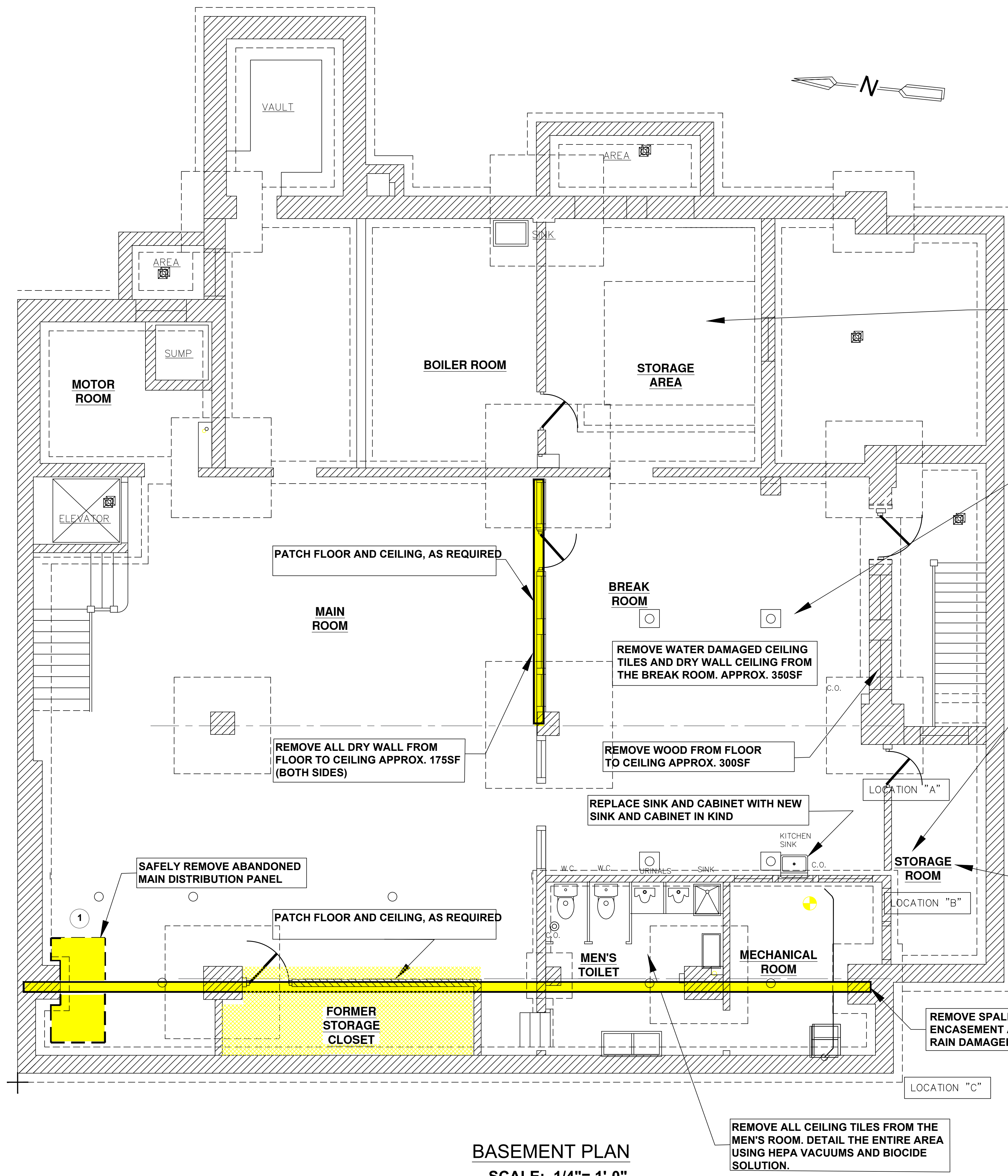
UNION COUNTY BOARD OF ELECTIONS BUILDING
WATER DAMAGE REPAIRS
271 N. BROAD ST.
ELIZABETH, NEW JERSEY

GENERAL NOTES

DESIGN: G.K.
DRAFTING: JC5
CHECKED: L.C.A.
APPROVED: L.C.A.

DATE: 07-14-2021

DWG. No.
G-1



SPECIFIC NOTES

1 CONTRACTOR SHALL INSPECT THE ABANDONED MAIN DISTRIBUTION PANEL TO BE CERTAIN THERE ARE NO LIVE WIRES WITHIN OR INTO THE MDP BEFORE DOING ANY WORK TO DISASSEMBLE AND REMOVE.

ALL WATER DAMAGED AND MOLDY BUILDING MATERIALS INCLUDING POROUS DAMAGED CONTENTS SUCH AS DAMAGED CARDBOARD AND PAPER SHALL BE REMOVED BY A QUALIFIED MICROBIAL REMEDIATION CONTRACTOR USING CONTROLS BUT NOT LIMITED TO HEPA FILTERED SCRUBBERS, HEPA VACUUMS, DEHUMIDIFIERS, BIOCIDES SOLUTION AND SEALER AND PROPER PPE.

ONCE WATER DAMAGED MATERIALS AND MOLD HAVE BEEN REMOVED FROM MAIN ROOM, BREAK ROOM MEN'S ROOM AND STORAGE AREAS, THEY SHALL BE DETAIL CLEANED UTILIZING HEPA AIR SCRUBBERS, HEPA VACUUMS AND BIOCIDES SOLUTION.

REMOVE WATER DAMAGED BOXES AND PAPERS DETAIL CLEANED ROOM USING HEPA VACUUMS AND BIOCIDES SOLUTION.

NOTE: 9"x 9" ASBESTOS CONTAINING VINYL FLOOR TILES AND MASTIC ARE PRESENT IN THE FILE STORAGE ROOM UNDER THE 12"x 12" VINYL FLOOR TILES APPROX. 100SF

- NOTES:**
- THIS CONTRACT DRAWING IS DIAGRAMMATIC WITH ITEMS AFFECTED BY THE WORK REPRESENTED BY HIGHLIGHTED AREAS AND SHOWN IN APPROXIMATE LOCATIONS. THE CONTRACTOR SHALL VERIFY ALL EQUIPMENT, DEVICES AND BUILDING COMPONENTS, LOCATIONS AND CONSTRUCTION RELATED REQUIREMENTS PRIOR TO PERFORMING ANY WORK WHATSOEVER AND ALL REQUIRED LABOR, MATERIALS AND APPURTANCES AND MAKING ALL PROVISIONS NECESSARY TO RENDER THE WORK FULLY FUNCTIONAL WHETHER OR NOT SUCH EQUIPMENT DEVICES ARE SPECIFICALLY SHOWN ON THE DRAWING.
 - CONTRACTOR SHALL COORDINATE WITH THE BUILDING MANAGEMENT TO ENSURE THAT HIS WORK DOES NOT CAUSE ANY DISRUPTION TO NORMAL FACILITY OPERATIONS.
 - CONTRACTOR SHALL REFER TO OTHER CONTRACT SPECIFICATIONS DOCUMENTS AND SPECIFIC DETAILS.
 - (B) CONTRACTOR SHALL FIELD VERIFY THE LOCATION AND AMOUNT OF ASBESTOS CONTAINING MATERIALS (ACM) WITHIN THE WORK AREAS AS WELL AS THOSE INDICATED IN THE REPORT BY ENVIRONMENTAL CONNECTION DATED MARCH 25TH, 2020.

BASEMENT PLAN
SCALE: 1/4" = 1'-0"

REVISIONS				
No.	DATE	DESCRIPTION	CKD.	APP'D.

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Union, NJ 07083
Tel: (908)258-7943

LCA
ENGINEERING

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NJ PROFESSIONAL ENGINEER No. 23069

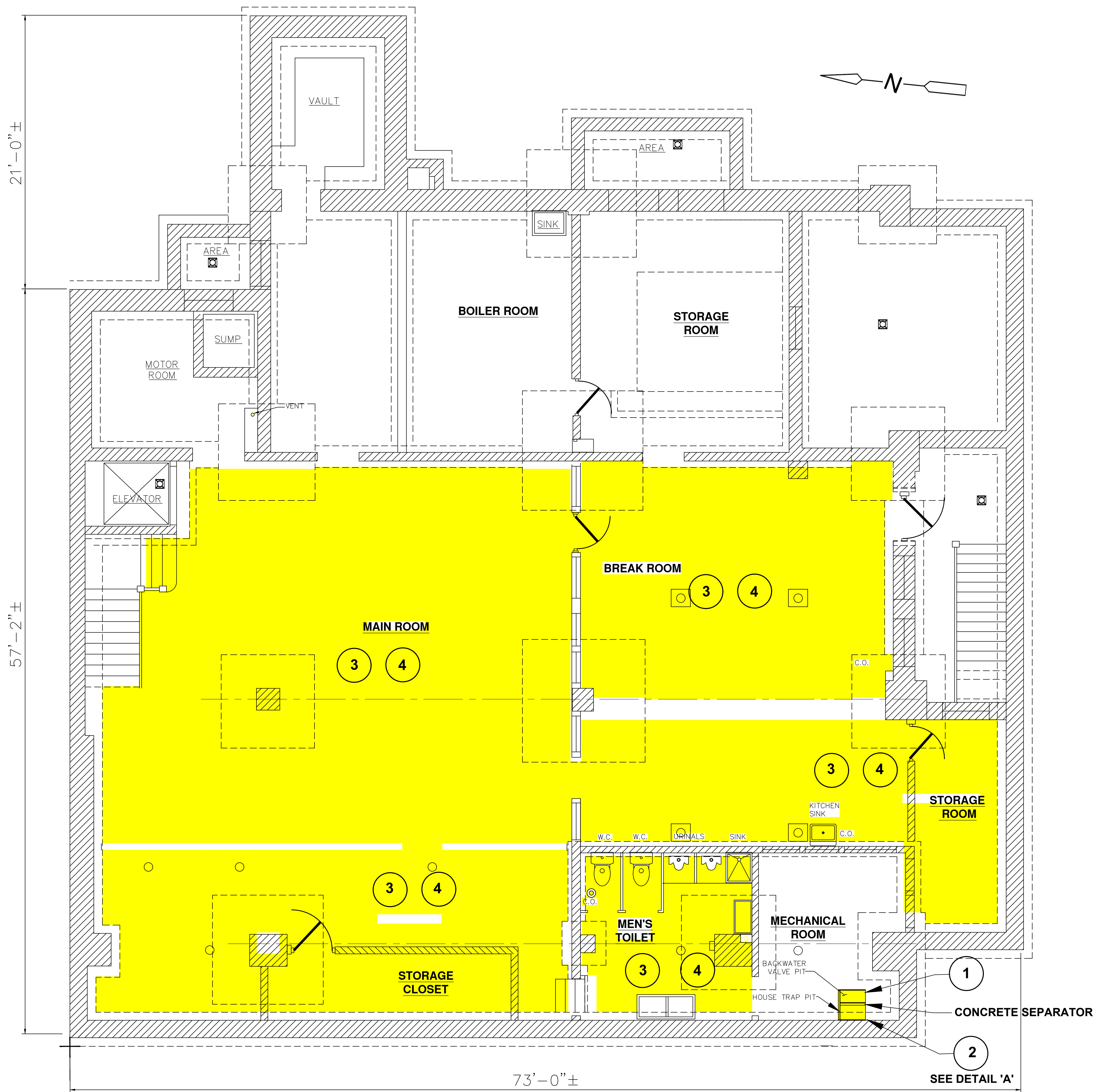
UNION COUNTY BOARD OF ELECTIONS BUILDING
WATER DAMAGE REPAIRS
271 N. BROAD ST.
ELIZABETH, NEW JERSEY

WORK OVERVIEW
BASEMENT

DESIGN: G.K.
DRAFTING: JC5
CHECKED: L.C.A.
APPROVED: L.C.A.

DATE: 07-14-2021

DWG. No.
OV-1



BASEMENT PLAN
SCALE: 1/4"= 1'-0"



1 EXISTING BACK WATER VALVE (BWV)



2 EXISTING HOUSE TRAP



3 BREAK ROOM

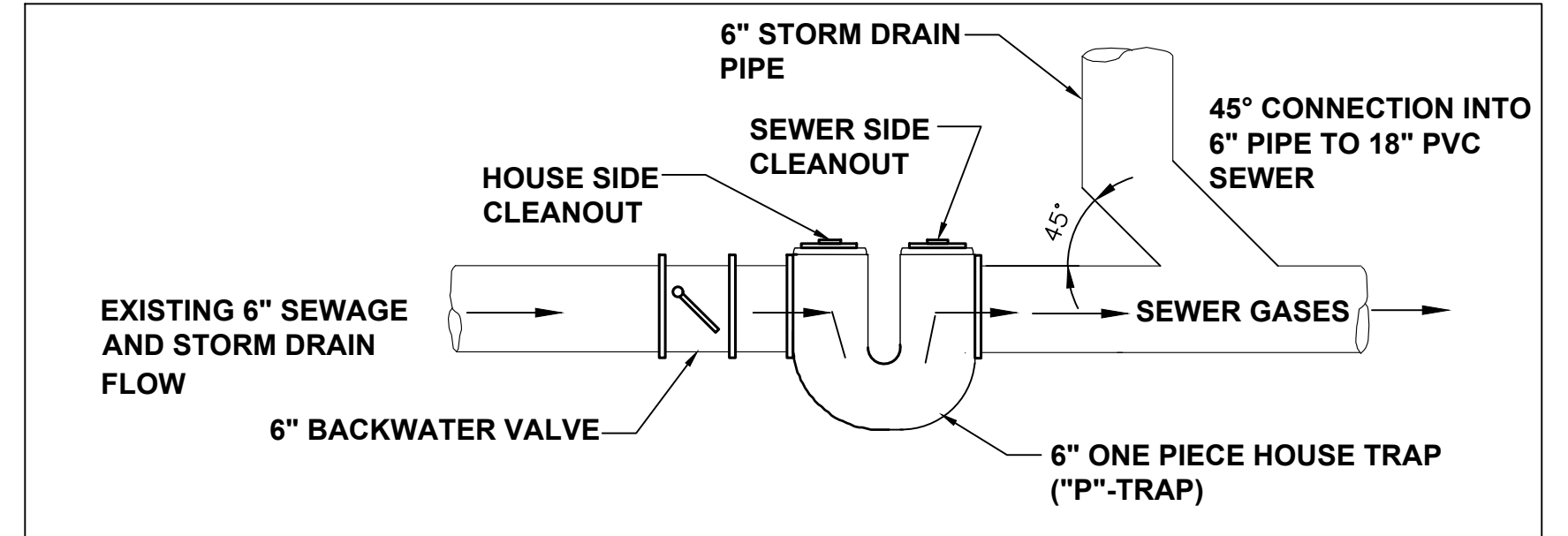


4 BREAK ROOM

SPECIFIC WORK AREA NOTES

- 1 CONTRACTOR REPLACE THE BACKWATER VALVE . REPLACEMENT BWV SHALL BE 6" GOING INTO THE HOUSE TRAP ("P" TRAP) (SEE PHOTO #1)
- 2 CONTRACTOR SHALL REPLACE THE HOUSE TRAP LOCATED IN A PIT ADJACENT TO THE BACKWATER VALVE. (PHOTO #2)
 - THE REPLACEMENT HOUSE TRAP SHALL BE 6" IN SIZE GOING OUTSIDE AND CONNECTING TO THE 18" PVC SEWER PIPE.
 - CONTRACTOR SHALL INSTALL VALVES IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
 - ALL FITTINGS AND VALVES SHALL BE MALLEABLE IRON.
 - CONTRACTOR SHALL COMPLY WITH ALL PIPING CODES AND REQUIREMENTS FOR PLUMBING FIXTURES.
 - CONTRACTOR SHALL PROVIDE ALL MATERIALS, EQUIPMENT AND ANY OTHER ITEMS REQUIRED FOR TESTS, REPAIRS AND REPLACEMENTS THAT ARE REQUIRED TO COMPLETE THE WORK OF THIS PROJECT.
- 3 CONTRACTOR SHALL REPLACE 14 DAMAGED 2'x4' CEILING TILES IN THE BASEMENT BREAK ROOM AND 6 DAMAGED 2'x4' CEILING TILES IN MEN'S ROOM. (SEE PHOTO #3)
- 4 CONTRACTOR SHALL REMOVE AND REPLACE DAMAGED 2'x4' FLUORESCENT FIXTURES THROUGHOUT THE ENTIRE BASEMENT, INCLUDING MAIN ROOM, BREAK ROOM, MEN'S TOILET, STORAGE ROOM AND FRONT AREA.
- 5 CONTRACTOR SHALL REPLACE SHEET ROCK THAT WAS REMOVED FROM WALLS DURING ASBESTOS ABATEMENT. SPACKLE SHEET ROCK AND THEN PAINT WITH COLORS SELECTED BY THE OWNER.
- 6 CONTRACTOR SHALL REMOVE AND REPLACE ANY DAMAGED "T" SUPPORTS FOR THE CEILING TILES PRIOR TO REPLACING DAMAGED OR MISSING CEILING TILES. (SEE PHOTO #4)

AREAS OF RESTORATION WORK



DETAIL 'A' SEWER DRAIN PIPE DETAIL
N.T.S.

NOTE:
CONTRACTOR SHALL CAREFULLY REMOVE THE HOUSE TRAP WHICH IS PARTIALLY UNDER CONCRETE. WHEN REMOVING THE CONCRETE OVER THE HOUSE TRAP THE CONTRACTOR SHALL BE CAREFUL NOT TO DAMAGE THE DOWN STREAM PIPE TO THE 18" PVC SEWER MAIN. ANY DAMAGE TO THE PIPE IS THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE REPLACED AT NO COST TO THE CITY. ALSO CAREFULLY REMOVE THE CONCRETE SEPARATOR BETWEEN THE BWV PIT AND THE HOUSE TRAP.

NOTES:

- 1. THIS CONTRACT DRAWING IS DIAGRAMMATIC WITH ITEMS AFFECTED BY THE WORK REPRESENTED BY HIGHLIGHTED AREAS AND SHOWN IN APPROXIMATE LOCATIONS. THE CONTRACTOR SHALL VERIFY ALL EQUIPMENT, DEVICES AND BUILDING COMPONENTS, LOCATIONS AND CONSTRUCTION RELATED REQUIREMENTS PRIOR TO PERFORMING ANY WORK WHATSOEVER AND ALL REQUIRED LABOR, MATERIALS AND APPURTANCES AND MAKING ALL PROVISIONS NECESSARY TO RENDER THE WORK FULLY FUNCTIONAL WHETHER OR NOT SUCH EQUIPMENT DEVICES ARE SPECIFICALLY SHOWN ON THE DRAWING.
- 2. CONTRACTOR SHALL COORDINATE WITH THE BUILDING MANAGEMENT TO ENSURE THAT HIS WORK DOES NOT CAUSE ANY DISRUPTION TO NORMAL FACILITY OPERATIONS.
- 3. FOR LEGEND AND GENERAL NOTES SEE DWG G-1
- 4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ASCERTAINING THE EXACT DIMENSIONS AND LOCATIONS OF ALL EQUIPMENT AND FOR CHECKING OUT ALL REQUIRED CLEARANCES
- 5. CONTRACTOR MAY SUMMIT TO THE COUNTY ENGINEER FOR CONSIDERATION AND APPROVAL ANY SUGGESTIONS THAT MAY IMPROVE THE FINAL PROJECT RESULT, AND WHILE MAINTAINING FULL COMPLIANCE WITH THE DESIGN INTENT. THE COUNTY WILL NOT BE RESPONSIBLE FOR ANY ASSUMPTIONS MADE BY THE CONTRACTOR.
- 7. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF EXISTING UNDERGROUND SERVICES (I.E. STORM, SEWER, HEATING, PRIMARY AND SECONDARY ELECTRIC, ETC.) WHETHER OR NOT SHOWN ON THE DRAWINGS BEFORE ANY EXCAVATION IS STARTED TO DETERMINE EXACT LOCATION OF ALL EXISTING SERVICES BY USE TRACING EQUIPMENT TO MARK AND PROTECT ALL EXISTING SERVICES LINES. CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY DAMAGE TO EXISTING UNDERGROUND SERVICES.

REVISIONS				
No.	DATE	DESCRIPTION	CKD.	APP'D.

1609 Vauxhall Road, Suite 206
Union, NJ 07083
Tel: (908)258-7943

LCA
ENGINEERING

LUIS C. AGUERO, P.E.
NJ PROFESSIONAL ENGINEER No. 23069

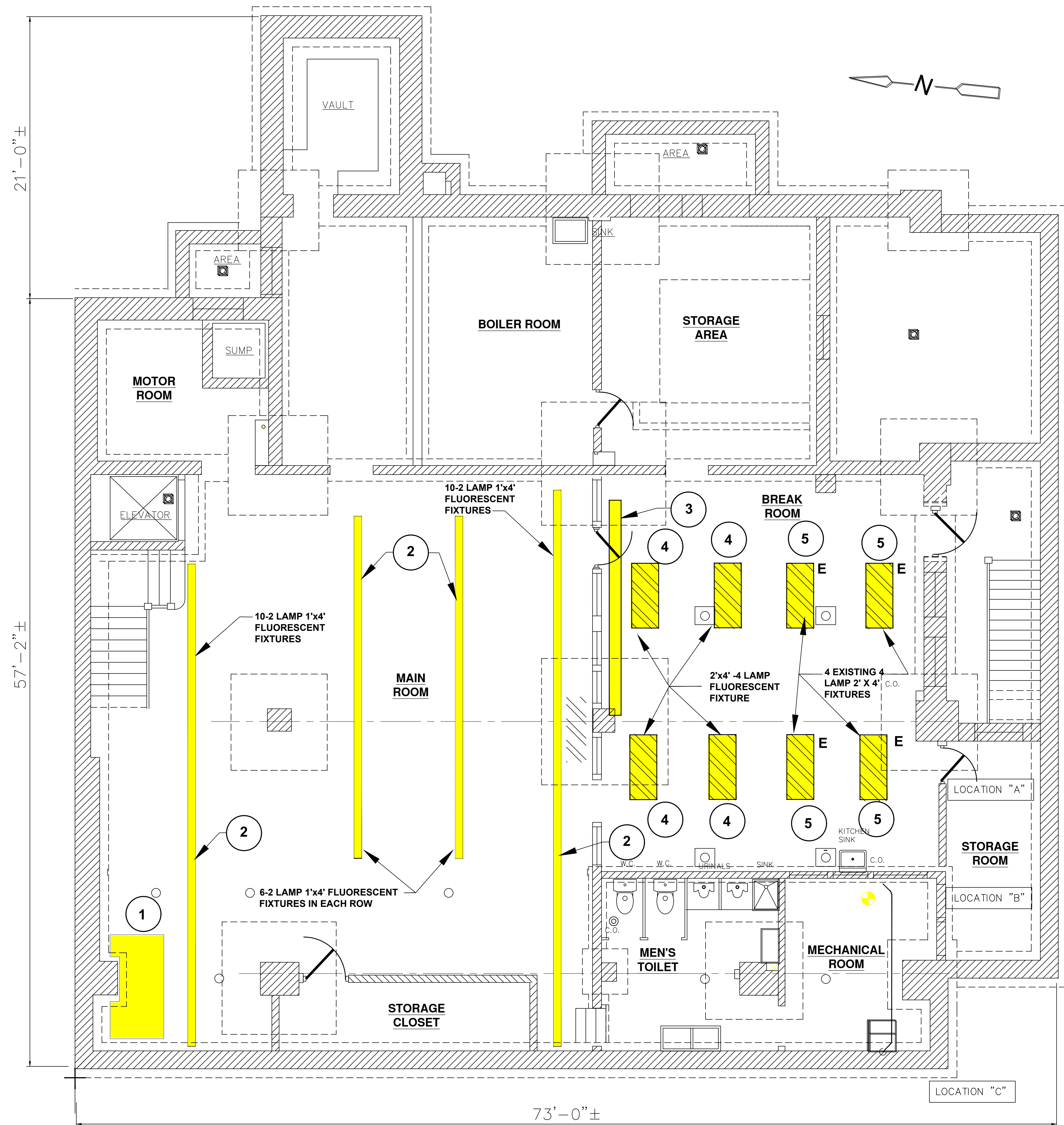
UNION COUNTY BOARD OF ELECTIONS BUILDING
WATER DAMAGE REPAIRS
271 N. BROAD ST.
ELIZABETH, NEW JERSEY

RESTORATION
BASEMENT FLOOR PLAN
II

DESIGN: G.K.
DRAFTING: JC5
CHECKED: L.C.A.
APPROVED: L.C.A.

DATE: 07-14-2021

DWG. No.
RE-2



BASEMENT PLAN
SCALE: 1/4" = 1'-0"

SPECIFIC NOTES

- ① CONTRACTOR SHALL INSPECT THE ABANDONED MAIN DISTRIBUTION PANEL TO BE CERTAIN THERE ARE NO LIVE WIRES WITHIN OR INTO THE MDP BEFORE DOING ANY WORK TO DISASSEMBLE AND REMOVE THE ABANDONED MDP. SEE DRAWING DE-1.
- ② CONTRACTOR SHALL REMOVE THE (32) 1'x4' 2 LAMP FLUORESCENT FIXTURES AND REPLACE WITH SIMILAR LED FIXTURES WITH PRISMATIC LENSES WIRED DIRECTLY @ 120VOLTS IN PARALLEL CIRCUITS.
- ③ CONTRACTOR SHALL REMOVE THE FOUR (4) TWO LAMP 1' X 4' FLUORESCENT FIXTURES IN THE BREAKROOM.
- ④ CONTRACTOR SHALL INSTALL FOUR (4) NEW 2' X 4' LED FIXTURES WITH PRISMATIC LENSES IN THE BREAK ROOM WIRED DIRECTLY @ 120VOLTS IN PARALLEL CIRCUITS.
- ⑤ CONTRACTOR SHALL UPGRADE OR REPLACE (4) EXISTING 2' X 4' LAMP FLUORESCENT FIXTURES TO LED TYPE 2' X 4' 4 LAMP FLUORESCENT FIXTURES WIRED DIRECTLY @ 120VOLTS IN PARALLEL CIRCUITS. INSTALL PRISMATIC LENSES ON EACH FIXTURE.

EXISTING FLUORESCENT FIXTURE (2' X 4')

EXISTING FLUORESCENT FIXTURE (1' X 4')

NOTES:

- 1. THIS CONTRACT DRAWING IS DIAGRAMMATIC WITH ITEMS AFFECTED BY THE WORK REPRESENTED BY HIGHLIGHTED AREAS AND SHOWN IN APPROXIMATE LOCATIONS. THE CONTRACTOR SHALL VERIFY ALL EQUIPMENT, DEVICES AND BUILDING COMPONENTS, LOCATIONS AND CONSTRUCTION RELATED REQUIREMENTS PRIOR TO PERFORMING ANY WORK WHATSOEVER AND ALL REQUIRED LABOR, MATERIALS AND APPURTANCES AND MAKING ALL PROVISIONS NECESSARY TO RENDER THE WORK FULLY FUNCTIONAL WHETHER OR NOT SUCH EQUIPMENT DEVICES ARE SPECIFICALLY SHOWN ON THE DRAWING.
- 2. CONTRACTOR SHALL COORDINATE WITH THE BUILDING MANAGEMENT TO ENSURE THAT HIS WORK DOES NOT CAUSE ANY DISRUPTION TO NORMAL FACILITY OPERATIONS.
- 3. FOR LEGEND AND GENERAL NOTES SEE DWG G-1
- 4. CONTRACTOR SHALL INSTALL NEW WIRING FOR ALL THE NEW FIXTURES BEING INSTALLED UNDER THIS CONTRACT.
- 5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ASCERTAINING THE EXACT DIMENSIONS AND LOCATIONS OF ALL EQUIPMENT AND FOR CHECKING OUT ALL REQUIRED CLEARANCES
- 6. CONTRACTOR MAY SUMMIT TO THE COUNTY ENGINEER FOR CONSIDERATION AND APPROVAL ANY SUGGESTIONS THAT MAY IMPROVE THE FINAL PROJECT RESULT; AND WHILE MAINTAINING FULL COMPLIANCE WITH THE DESIGN INTENT. THE COUNTY WILL NOT BE RESPONSIBLE FOR ANY ASSUMPTIONS MADE BY THE CONTRACTOR.
- 7. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF EXISTING UNDERGROUND SERVICES (I.E. STORM, SEWER, HEATING, PRIMARY AND SECONDARY ELECTRIC, ETC.) WHETHER OR NOT SHOWN ON THE DRAWINGS BEFORE ANY EXCAVATION IS STARTED TO DETERMINE EXACT LOCATION OF ALL EXISTING SERVICES BY USE TRACING EQUIPMENT TO MARK AND PROTECT ALL EXISTING SERVICES LINES. CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY DAMAGE TO EXISTING UNDERGROUND SERVICES.
- 8. THE CONTRACTOR SHALL BE RESPONSIBLE TO FURNISH AND INSTALL ALL WIRING, EQUIPMENT AND MATERIALS REQUIRED FOR A FULLY FUNCTIONAL AND CODE COMPLIANT SYSTEM, WHICH MEETS OBJECTIVES. THE WORK ALSO INCLUDES ALL INTERCONNECTING WIRING AND CONDUITS BETWEEN THE UNITS, DEVICES AND EQUIPMENT NOT SHOWN ON THE DRAWINGS, NOR STIPULATED IN THE SPECIFICATIONS, BUT WHICH ARE REQUIRED FOR A COMPLETE AND FULLY OPERATIONAL INSTALLATION.

REVISIONS				
No.	DATE	DESCRIPTION	CKD.	APP'D.

1609 Vauxhall Road, Suite 206
Union, NJ 07083
Tel: (908)258-7943

LCA
ENGINEERING

LUIS C. AGUERO, P.E.
NJ PROFESSIONAL ENGINEER No. 23069

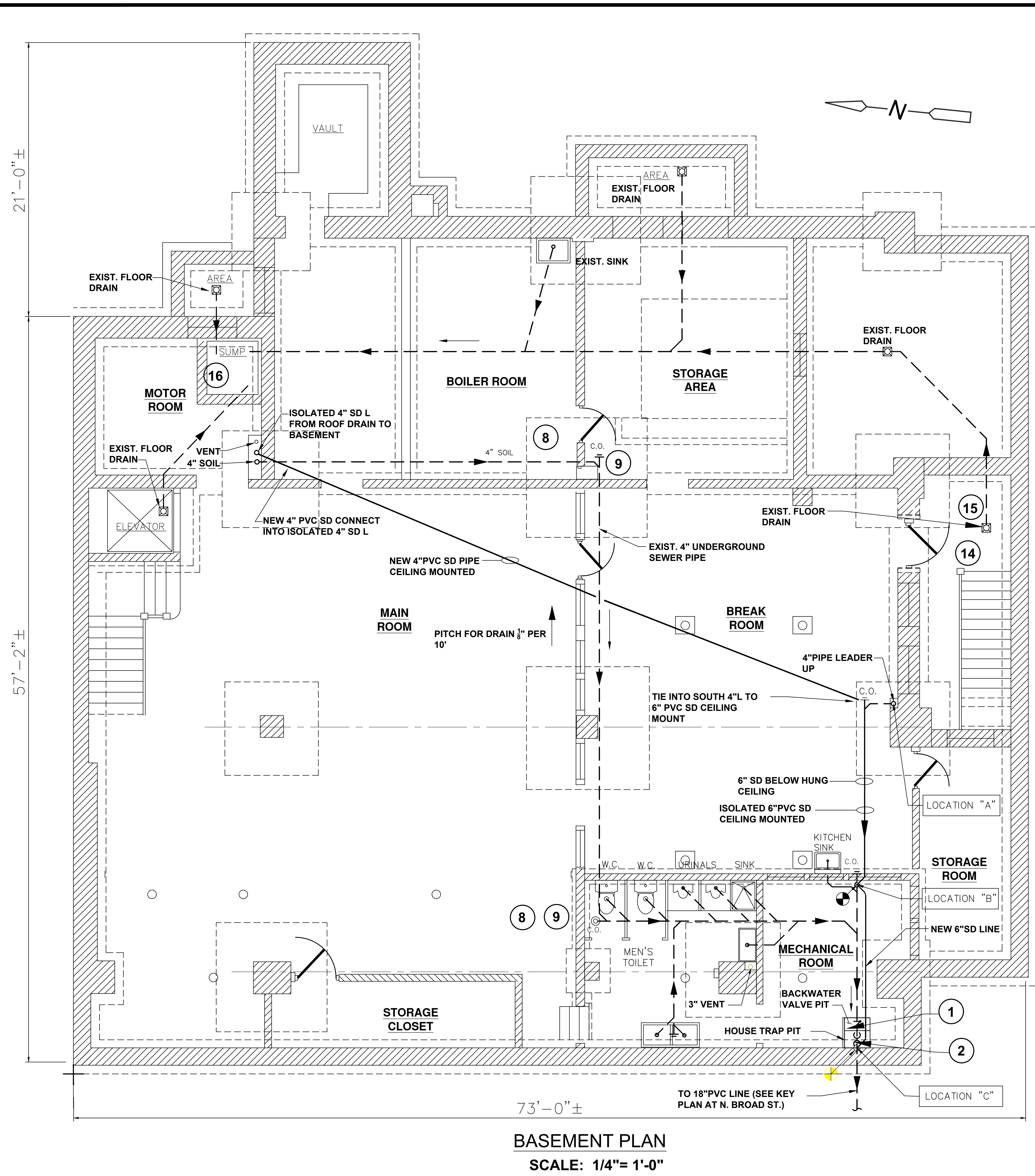
UNION COUNTY BOARD OF ELECTIONS BUILDING
WATER DAMAGE REPAIRS
271 N. BROAD ST.
ELIZABETH, NEW JERSEY

RESTORATION ELECTRICAL
BASEMENT FLOOR PLAN
II

DESIGN: G.K.
DRAFTING: JC5
CHECKED: L.C.A.
APPROVED: L.C.A.

DATE: 07-14-2021

DWG. No.
E-1



1 EXISTING BACKWATER VALVE



2 EXISTING HOUSE TRAP



14 EXISTING FLOOR DRAIN

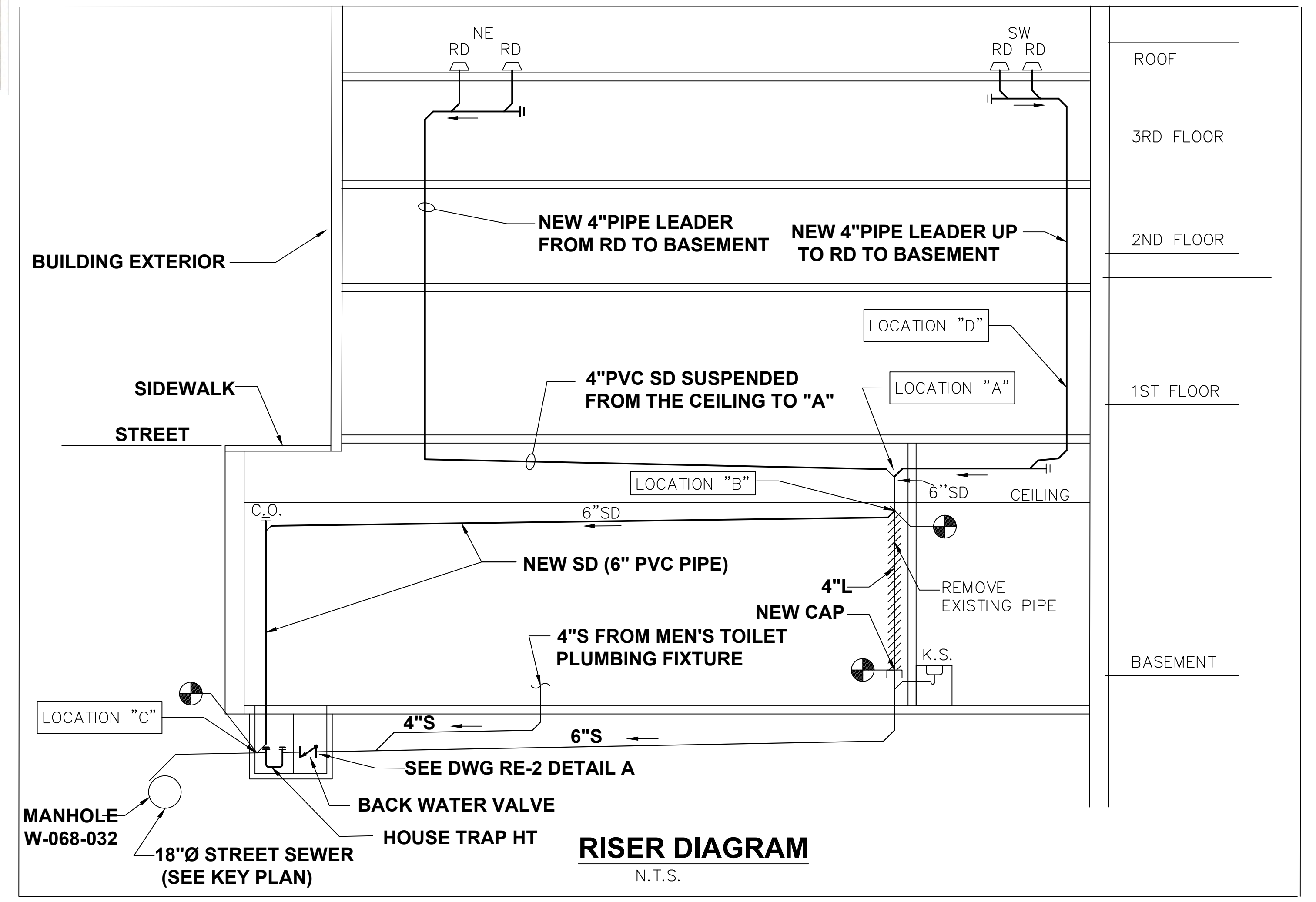
6. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF EXISTING UNDERGROUND SERVICES (I.E. STORM, SEWER, HEATING, PRIMARY AND SECONDARY ELECTRIC, ETC.) WHETHER OR NOT SHOWN ON THE DRAWINGS BEFORE ANY EXCAVATION IS STARTED TO DETERMINE EXACT LOCATION OF ALL EXISTING SERVICES BY USE TRACING EQUIPMENT TO MARK AND PROTECT ALL EXISTING SERVICES LINES. CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY DAMAGE TO EXISTING UNDERGROUND SERVICES.

SPECIFIC NOTES

- CONTRACTOR SHALL REMOVE AND REPLACE THE BACK FLOW VALVE LOCATED IN THE PIT IN THE SOUTHWEST CORNER OF THE BUILDING. VALVE SHALL BE FULL SIZE OF THE COMBINATION SEWAGE LINE /STORM DRAIN PIPE GOING OUT TO THE 18" DIAMETER PVC IN THE STREET. (SEE PHOTO #1)
- CONTRACTOR SHALL REMOVE AND REPLACE THE HOUSE TRAP IN THE PIT ADJACENT TO THE BACKFLOW VALVE PIT. THE HOUSE TRAP SHALL BE OF THE EQUIVALENT SIZE. (PHOTO #2)
- CONTRACTOR SHALL INSTALL VALVES IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
- CONTRACTOR SHALL COMPLY WITH THE COMMISSIONING REQUIREMENTS FOR PLUMBING FIXTURES.
- CONTRACTOR SHALL PROVIDE ALL MATERIALS, EQUIPMENT AND ANY OTHER ITEMS REQUIRED FOR TESTS, REPAIRS AND REPLACEMENTS THAT ARE REQUIRED TO COMPLETE THE WORK OF THIS PROJECT.
- THE WORK OF THE CONTRACTOR SHALL INCLUDE THE FURNISHING OF ALL LABOR, TESTING INSTRUMENTS, GAUGES, PUMPS AND OTHER EQUIPMENT REQUIRED OR ARE NECESSARY FOR TEST REQUIRED BY LAW, RULES AND REGULATIONS OR AS SPECIFIED.
- IF ANY TEST, LEAKS ARE OBSERVED, THE DEFECTIVE WORK OR MATERIAL SHALL BE REPLACED BY THE CONTRACTOR.
- CONTRACTOR SHALL USE A VIDEO CAMERA TO VIEW THE INSIDE OF THE 4" DRAINS, SHOWN ON THE DRAWING, TO DETERMINE THE CONDITION OF THE DRAIN PIPES FROM THE VARIOUS CLEAN OUT LOCATIONS, ALL THE WAY TO THE STREET THROUGH THE BWV AND HOUSE TRAP.
- SHOULD DRAINS APPEAR TO NEED CLEANING, THE CONTRACTOR SHALL USE AN AUGER EQUIPPED SNAKE TO "ROTO-ROOTER" THE DRAIN LINES.
- CONTRACTOR SHALL DISCONNECT AND REMOVE THE EXISTING 4" STORM DRAIN FROM THE ROOF DRAIN TO THE FIRST FLOOR LOCATION "D".
- CONTRACTOR SHALL INSTALL A NEW 4" DRAIN PIPE FROM THE ROOF DRAIN TO THE BASEMENT AS SHOWN ON DRAWING AS LOCATIONS A & B.
- INSTALL THE 4" ROOF DRAIN INTO THE COMBINED 6" SEWAGE/ STORM DRAIN WHILE REPLACING THE BACKWATER VALVE AND HOUSE TRAP AT THE SAME TIME.
- CONTRACTOR SHALL SUBMIT A DETAILED SKETCH SHOWING HIS PROPOSED CONNECTION OF THE 6" STORM DRAIN INTO THE 6" COMBINATION SEWAGE / STORM DRAIN TO THE 18" SEWER LINE IN THE STREET, FOR THE ENGINEER'S REVIEW. SEE DRAWING RE-2 DETAIL "A"
- CONTRACTOR SHALL CLEAN 4" SOIL PIPE AND STORM DRAIN WITH "ROTO-ROOTER" TYPE OR PLUMBERS AUGER SNAKE FROM VARIOUS CLEAN-OUT POINTS AS SHOWN ON DRAWINGS.
- CONTRACTOR SHALL INSPECT THE OUTDOOR FLOOR DRAIN WITH A VIDEO CAMERA TO DETERMINE IF THE DRAIN LINE ALSO NEEDS CLEANING. CONTRACTOR SHALL "ROTO-ROOTER" IF THE LINE NEEDS CLEANING.
- CONTRACTOR SHALL INSPECT THE SUMP PUMP TO DETERMINE ITS CONDITION. SHOULD THE PUMP BE DEFECTIVE, CONTRACTOR SHALL REPLACE IT IN KIND.

NOTES :

- THIS CONTRACT DRAWING IS DIAGRAMMATIC WITH ITEMS AFFECTED BY THE WORK REPRESENTED BY HIGHLIGHTED AREAS AND SHOWN IN APPROXIMATE LOCATIONS. THE CONTRACTOR SHALL VERIFY ALL EQUIPMENT, PIPES, DEVICES AND BUILDING COMPONENTS, LOCATIONS AND CONSTRUCTION RELATED REQUIREMENTS PRIOR TO PERFORMING ANY WORK WHATSOEVER AND ALL REQUIRED LABOR, MATERIALS AND APPURTANCES AND MAKING ALL PROVISIONS NECESSARY TO RENDER THE WORK FULLY FUNCTIONAL WHETHER OR NOT SUCH EQUIPMENT DEVICES ARE SPECIFICALLY SHOWN ON THE DRAWING.
- CONTRACTOR SHALL COORDINATE WITH THE BUILDING MANAGEMENT TO ENSURE THAT HIS WORK DOES NOT CAUSE ANY DISRUPTION TO NORMAL FACILITY OPERATIONS.
- FOR LEGEND AND GENERAL NOTES SEE DWG G-1
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ASCERTAINING THE EXACT DIMENSIONS AND LOCATIONS OF ALL EQUIPMENT AND FOR CHECKING OUT ALL REQUIRED CLEARANCES
- CONTRACTOR MAY SUBMIT TO THE COUNTY ENGINEER FOR CONSIDERATION AND APPROVAL ANY SUGGESTIONS THAT MAY IMPROVE THE FINAL PROJECT RESULT; AND WHILE MAINTAINING FULL COMPLIANCE WITH THE DESIGN INTENT. THE COUNTY WILL NOT BE RESPONSIBLE FOR ANY ASSUMPTIONS MADE BY THE CONTRACTOR.



REVISIONS				
No.	DATE	DESCRIPTION	CKD.	APP'D.

1609 Vauxhall Road, Suite 206
Union, NJ 07083
Tel: (908)258-7943

LCA ENGINEERING

LUIS C. AGUERO, P.E.
NJ PROFESSIONAL ENGINEER No. 23069

UNION COUNTY BOARD OF ELECTIONS BUILDING
WATER DAMAGE REPAIRS
271 N. BROAD ST.
ELIZABETH, NEW JERSEY

UPGRADE PLUMBING BASEMENT FLOOR PLAN

DESIGN: G.K.
DRAFTING: JC5
CHECKED: L.C.A.
APPROVED: L.C.A.

DWG. No. **PL-1**

DATE: 07-14-2021



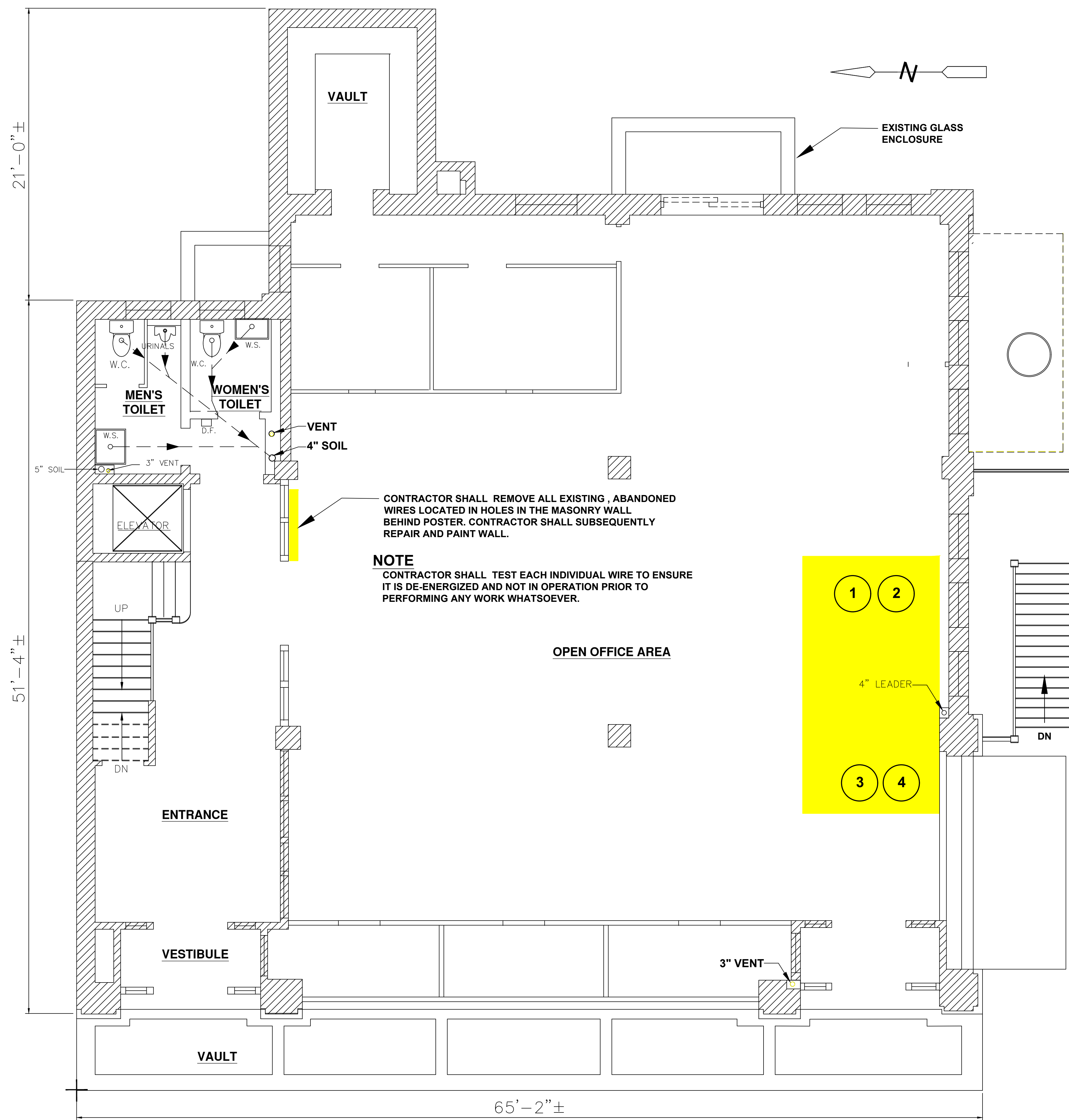
1 FLOOR AND WALL DAMAGE



2 CEILING TILE DAMAGE



3 FLOOR CARPETING DAMAGE



CONTRACTOR SHALL REMOVE ALL EXISTING, ABANDONED WIRES LOCATED IN HOLES IN THE MASONRY WALL BEHIND POSTER. CONTRACTOR SHALL SUBSEQUENTLY REPAIR AND PAINT WALL.

NOTE
CONTRACTOR SHALL TEST EACH INDIVIDUAL WIRE TO ENSURE IT IS DE-ENERGIZED AND NOT IN OPERATION PRIOR TO PERFORMING ANY WORK WHATSOEVER.

SPECIFIC NOTES

- 1 CONTRACTOR SHALL REMOVE AND REPLACE DAMAGED WALL COVERING ON FIRST FLOOR IN THE STORAGE ROOM AREA WITH NEW SHEET ROCK, HE SHALL SPACKLE AND PAINT OVER (APPROX. 120 SQ. FT +/-) PER COUNTY .CHOSE AND MATCHING COLOR. (SEE PHOTO #1)
- 2 CONTRACTOR SHALL REPLACE ALL DAMAGED OR MISSING 2'x2' CEILING TILES ON FIRST FLOOR STORAGE ROOM.
- 3 CONTRACTOR SHALL REPLACE IN ALL DAMAGED CARPETING (APPROX. 100 FT) ON FIRST FLOOR STORAGE ROOM.
- 4 CONTRACTOR SHALL REMOVE AND REPLACE DAMAGED (8) 2 LAMP 1'x4' AND (2) 2 LAMP 2'x2' FLUORESCENT FIXTURES WITH NEW EQUAL TO THE EXISTING FLUORESCENT FIXTURES. PROVIDE ALL NECESSARY WIRING AND SWITCHING.

AREAS OF RESTORATION WORK

NOTES:

- 1. THIS CONTRACT DRAWING IS DIAGRAMMATIC SHOWING ITEMS AFFECTED BY THE WORK REPRESENTED BY THE HIGHLIGHTED AREAS THE WORK TO BE PERFORMED SHOWN AT APPROXIMATE LOCATIONS.
- 2. THE CONTRACTOR SHALL VERIFY ALL EQUIPMENT, DEVICES AND BUILDING COMPONENTS, LOCATIONS AND CONSTRUCTION RELATED REQUIREMENTS PRIOR TO PERFORMING ANY WORK WHATSOEVER AND SHALL PROVIDE ALL NECESSARY LABOR, MATERIALS AND APPURTANCES AND SHALL MAKE ALL PROVISIONS NECESSARY TO RENDER HIS WORK FULLY FUNCTIONAL WHETHER OR NOT SUCH EQUIPMENT DEVICES ARE SPECIFICALLY SHOWN ON THE DRAWING.
- 3. THE CONTRACTOR SHALL COORDINATE WITH THE BUILDING MANAGEMENT TO ENSURE THAT HIS WORK DOES NOT CAUSE ANY DISRUPTION NOR INTERFERES WITH NORMAL FACILITY OPERATIONS.
- 4. FOR LEGEND AND GENERAL NOTES SEE DWG G-1
- 5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ASCERTAINING THE EXACT DIMENSIONS AND LOCATIONS OF ALL EQUIPMENT AND FOR CHECKING OUT ALL REQUIRED CLEARANCES
- 6. CONTRACTOR MAY SUMMIT TO THE COUNTY ENGINEER FOR CONSIDERATION AND APPROVAL ANY SUGGESTIONS THAT MAY IMPROVE THE FINAL PROJECT RESULT; AND WHILE MAINTAINING FULL COMPLIANCE WITH THE DESIGN INTENT. THE COUNTY WILL NOT BE RESPONSIBLE FOR ANY ASSUMPTIONS MADE BY THE CONTRACTOR.
- 7. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF EXISTING UNDERGROUND SERVICES (I.E. STORM, SEWER, HEATING, PRIMARY AND SECONDARY ELECTRIC, ETC.) WHETHER OR NOT SHOWN ON THE DRAWINGS BEFORE ANY EXCAVATION IS STARTED TO DETERMINE EXACT LOCATION OF ALL EXISTING SERVICES BY USE TRACING EQUIPMENT TO MARK AND PROTECT ALL EXISTING SERVICES LINES. CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY DAMAGE TO EXISTING UNDERGROUND SERVICES.

FIRST FLOOR PLAN
SCALE: 1/4"= 1'-0"

REVISIONS				
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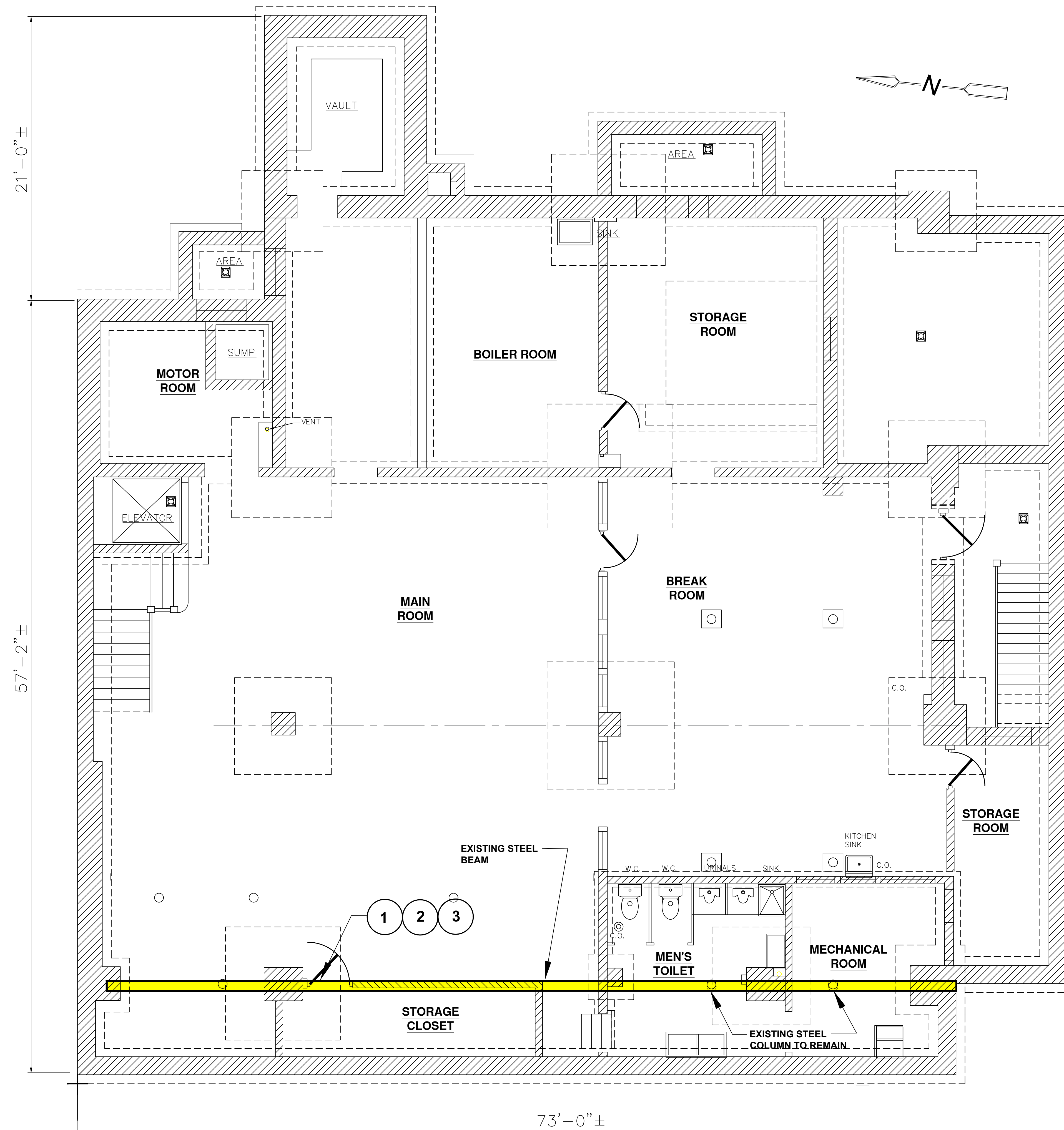
UNION COUNTY BOARD OF ELECTIONS BUILDING
WATER DAMAGE REPAIRS
271 N. BROAD ST.
ELIZABETH, NEW JERSEY

RESTORATION
FIRST FLOOR PLAN

DESIGN: G.K.
DRAFTING: JC5
CHECKED: L.C.A.
APPROVED: L.C.A.

DATE: 07-14-2021

DWG. No.
RE-1



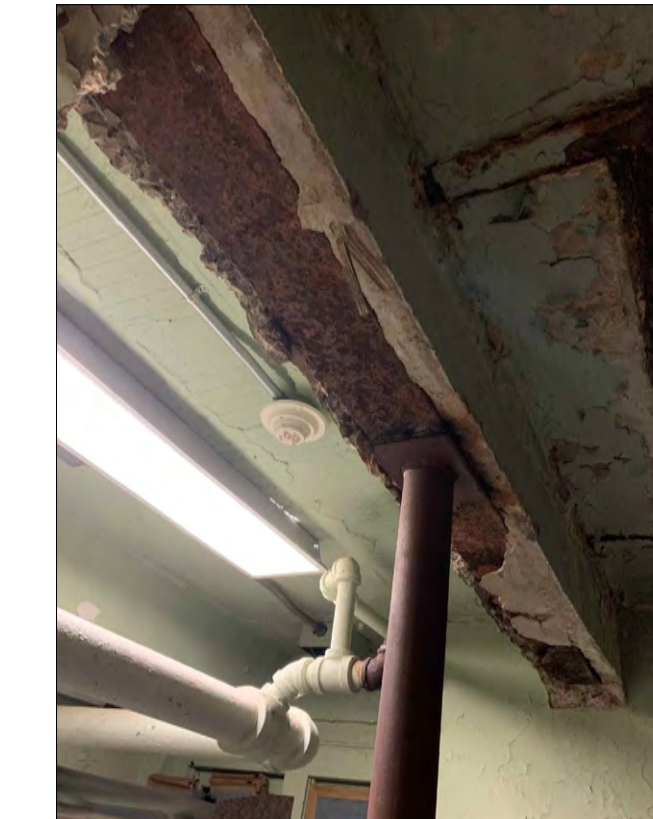
BASEMENT PLAN
SCALE: 1/4"= 1'-0"



①



①



②



③

SPECIFIC NOTES

- ① CONTRACTOR SHALL REMOVE THE SPALLED AND LOOSE CONCRETE ENCASING THE STEEL BEAMS IN THE BASEMENT. PHOTO 1
- ② CONTRACTOR SHALL THOROUGHLY CLEAN THE STEEL BEAMS, THAT SUPPORT THE BUILDING'S FRONT WALL, OF RUST, DIRT AND LOOSE MILL SCALE. ANY STEEL THAT HAS LOST MORE THAN 25% OF IT'S CROSS SECTION AREA WILL NEED TO BE COMPLETELY REMOVED AND REPLACED IN KIND, REINFORCED OR RESUPPORTED. PHOTO 2 & 3.
- ③ CONTRACTOR SHALL AFTER REMOVING SPALLED AND LOOSE CONCRETE THOROUGHLY CLEAN THE STEEL BEAMS, PAINT THE STEEL BEAMS WITH TWO COATS OF RUST PROOF PAINT.

LEGEND

- STEEL BEAMS RESTORATION WORK
- ② REFERS TO SPECIFIC NOTE AND PHOTO NUMBER

NOTES:

- 1. THIS CONTRACT DRAWING IS DIAGRAMMATIC WITH ITEMS AFFECTED BY THE WORK REPRESENTED BY HIGHLIGHTED AREAS AND SHOWN IN APPROXIMATE LOCATIONS. THE CONTRACTOR SHALL VERIFY ALL EQUIPMENT, DEVICES AND BUILDING COMPONENTS, LOCATIONS AND CONSTRUCTION RELATED REQUIREMENTS PRIOR TO PERFORMING ANY WORK WHATSOEVER AND ALL REQUIRED LABOR, MATERIALS AND APPURTANCES AND MAKING ALL PROVISIONS NECESSARY TO RENDER THE WORK FULLY FUNCTIONAL WHETHER OR NOT SUCH EQUIPMENT DEVICES ARE SPECIFICALLY SHOWN ON THE DRAWING.
- 2. CONTRACTOR SHALL COORDINATE WITH THE BUILDING MANAGEMENT TO ENSURE THAT HIS WORK DOES NOT CAUSE ANY DISRUPTION TO NORMAL FACILITY OPERATIONS.
- 3. FOR LEGEND AND GENERAL NOTES SEE DWG G-1
- 4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ASCERTAINING THE EXACT DIMENSIONS AND LOCATIONS OF ALL EQUIPMENT AND FOR CHECKING OUT ALL REQUIRED CLEARANCES
- 5. CONTRACTOR MAY SUMMIT TO THE COUNTY ENGINEER FOR CONSIDERATION AND APPROVAL ANY SUGGESTIONS THAT MAY IMPROVE THE FINAL PROJECT RESULT; AND WHILE MAINTAINING FULL COMPLIANCE WITH THE DESIGN INTENT. THE COUNTY WILL NOT BE RESPONSIBLE FOR ANY ASSUMPTIONS MADE BY THE CONTRACTOR.
- 7. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF EXISTING UNDERGROUND SERVICES (I.E. STORM, SEWER, HEATING, PRIMARY AND SECONDARY ELECTRIC, ETC.) WHETHER OR NOT SHOWN ON THE DRAWINGS BEFORE ANY EXCAVATION IS STARTED TO DETERMINE EXACT LOCATION OF ALL EXISTING SERVICES BY USE TRACING EQUIPMENT TO MARK AND PROTECT ALL EXISTING SERVICES LINES. CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY DAMAGE TO EXISTING UNDERGROUND SERVICES.

REVISIONS				
No.	DATE	DESCRIPTION	CKD.	APP'D.

1609 Vauxhall Road, Suite 206
Union, NJ 07083
Tel: (908)258-7943

LCA
ENGINEERING

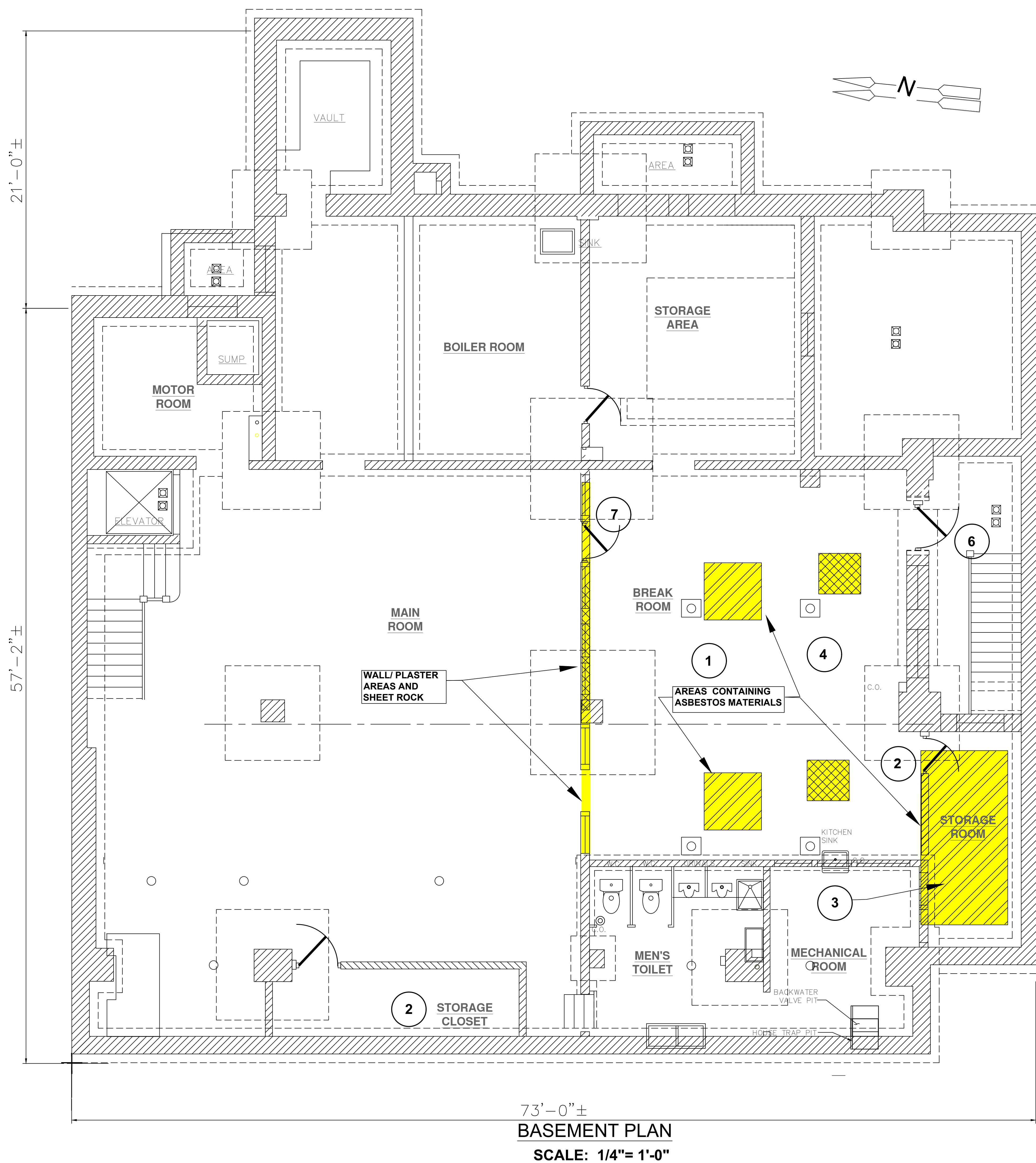
LUIS C. AGUERO, P.E.
NJ PROFESSIONAL ENGINEER No. 23069

UNION COUNTY BOARD OF ELECTIONS BUILDING
WATER DAMAGE REPAIRS
271 N. BROAD ST.
ELIZABETH, NEW JERSEY

UPGRADE STRUCTURAL
BASEMENT FLOOR PLAN

DESIGN: G.K.
DRAFTING: JC5
CHECKED: L.C.A.
APPROVED: L.C.A.

DWG. No.
STR-1



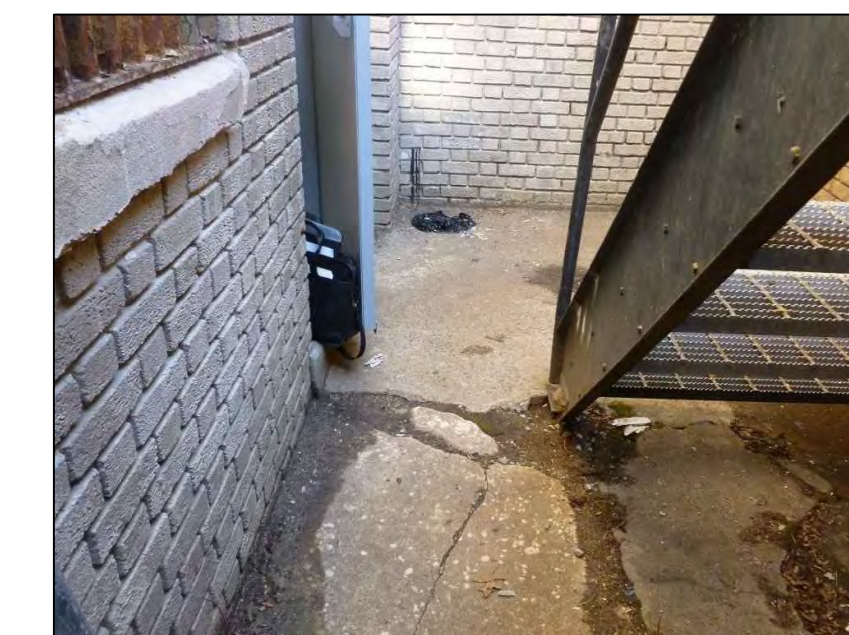
2



3



4



6



7

SPECIFIC NOTES (REFER TO PLAN AND PHOTOS)

- 1 CONTRACTOR SHALL FIELD VERIFY THE LOCATION AND AMOUNT OF ASBESTOS CONTAINING MATERIAL (ACM) AND FAMILIARIZE HIMSELF/HERSELF WITH EXISTING CONDITIONS IN THE BASEMENT AREA OF THE BUILDING, AT 271 BROAD ST, ELIZABETH , NJ BEFORE SUBMISSION OF HIS/HER BID.
- 2 CONTRACTOR SHALL REMOVE ALL THE WATER DAMAGE PAPER CONTENTS AND TRASH FROM THE STORAGE ROOM AND DISPOSE OF IT. IF IT CAN NOT BE DISPOSED OF IT SHALL BE HEPA VACUUMED AND SEALED IN CLEAR POLYETHYLENE BAGS AND STORED IN A SUITABLE AREA OUTSIDE OF THE OCCUPIED SPACES IN THE BUILDING.
- 3 CONTRACTOR SHALL REMOVE THE ACM 9"x 9" VINYL FLOOR TILES BELOW THE 12"x 12" VINYL FLOOR TILES IN THE PAPER STORAGE ROOM. (APPROXIMATELY 100 SQ. FT. CONTRACTOR TO VERIFY.)
- 4 CONTRACTOR SHALL REMOVE ALL ASBESTOS CONTAINING PLASTER LOCATED NEAR THE STORAGE ROOM AREA AND THROUGHOUT THE BASEMENT INCLUDING CEILING PLASTER ABOVE THE SUSPENDED CEILING. ANY PLASTER VISIBLE THROUGHOUT THE BASEMENTS SHALL BE CONSIDERED TO CONTAIN ASBESTOS.
- 5 CONTRACTOR SHALL CREATE A CONTAINMENT AREA INCLUDING HEPA FILTERED AIR SCRUBBERS AND POLYETHYLENE SHEETING IT SHALL BE INSTALLED BY A QUALIFIED MICROBIAL REMEDIATION CONTRACTOR AND SHALL BE KEPT IN PLACE DURING THE ENTIRE REMOVAL AND CLEANING ACTIVITIES.
- 6 CONTRACTOR SHALL PROPERLY HANDLE PACKAGE AND TRANSPORT ALL ACM TO AN APPROVED ASBESTOS ONLY LANDFILL, THROUGH THE BASEMENT DOOR. REFER TO SPECIFIC NOTE AND PHOTO NUMBER.
- 7 CONTRACTOR SHALL REMOVE THE PLASTER WALLS FROM FLOOR TO CEILING THAT SEPARATES THE BREAKROOM FROM THE MAIN ROOM IN THE BASEMENT THIS SHEETROCK SHALL THEN BE SAFELY AND PROPERLY DISPOSED OF.

LEGEND

- LOCATION OF ACM IN BASEMENT AREAS OF BUILDING.(TO BE REMOVED)
- LOCATION OF ACM IN PLASTER AT VARIOUS LOCATIONS IN THE WALLS AND ABOVE SUSPENDED CEILING. (TO BE REMOVED)

NOTES:

1. CONTRACTOR SHALL ENGAGE A STATE OF NEW JERSEY LICENSED ASBESTOS SUBCONTRACTOR TO REMOVE AND STABILIZE ALL THE ASBESTOS CONTAINING MATERIALS IN THE BUILDING BASEMENT.
2. THIS CONTRACT DRAWING IS DIAGRAMMATIC WITH ITEMS AFFECTED BY THE WORK REPRESENTED BY HIGHLIGHTED AREAS AND SHOWN IN APPROXIMATE LOCATIONS. THE CONTRACTOR SHALL VERIFY ALL EQUIPMENT, DEVICES AND BUILDING COMPONENTS LOCATIONS AND CONSTRUCTION RELATED REQUIREMENTS, PRIOR TO PERFORMING ANY WORK WHATSOEVER AND SHALL FURNISH ALL REQUIRED LABOR, MATERIALS AND APPURTENANCES AND MAKE ALL PROVISIONS NECESSARY TO RENDER THE WORK FULLY FUNCTIONAL WHETHER OR NOT SUCH EQUIPMENT, DEVICES AND APPURTENANCES ARE SPECIFICALLY SHOWN ON THE DRAWING.
3. CONTRACTOR SHALL COORDINATE WITH THE BUILDING MANAGEMENT TO ENSURE THAT HIS WORK DOES NOT CAUSE ANY DISRUPTION TO NORMAL OPERATIONS, AT THE FACILITY.
4. FOR LEGEND AND GENERAL NOTES SEE DWG G-1
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ASCERTAINING THE EXACT DIMENSIONS AND LOCATIONS OF ALL EQUIPMENT AND FOR CHECKING OUT ALL REQUIRED CLEARANCES
6. CONTRACTOR MAY SUMMIT TO THE COUNTY ENGINEER FOR CONSIDERATION AND APPROVAL ANY SUGGESTIONS THAT MAY IMPROVE THE FINAL PROJECT RESULT; AND WHILE MAINTAINING FULL COMPLIANCE WITH THE DESIGN INTENT. THE COUNTY WILL NOT BE RESPONSIBLE FOR ANY ASSUMPTIONS MADE BY THE CONTRACTOR.
7. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF EXISTING UNDERGROUND SERVICES (I.E. STORM, SEWER, HEATING, PRIMARY AND SECONDARY ELECTRIC, ETC.) WHETHER OR NOT SHOWN ON THE DRAWINGS BEFORE ANY EXCAVATION IS STARTED TO DETERMINE EXACT LOCATION OF ALL EXISTING SERVICES BY USE TRACING EQUIPMENT TO MARK AND PROTECT ALL EXISTING SERVICES LINES. CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY DAMAGE TO EXISTING UNDERGROUND SERVICES.
8. PLEASE REFER TO DWG OV-1 NOTE No.4

REVISIONS				
No.	DATE	DESCRIPTION	CKD.	APP'D.

1609 Vauxhall Road, Suite 206
 Union, NJ 07083
 Tel: (908)258-7943
LCA
 ENGINEERING
 LUIS C. AGUERO, P.E.
 NJ PROFESSIONAL ENGINEER No. 23069

UNION COUNTY BOARD OF ELECTIONS BUILDING
WATER DAMAGE REPAIRS
271 N. BROAD ST.
ELIZABETH, NEW JERSEY

ASBESTOS REMOVAL
BASEMENT FLOOR PLAN

DESIGN: G.K.
 DRAFTING: JC5
 CHECKED: L.C.A.
 APPROVED: L.C.A.
 DATE: 07-14-2021

DWG. No.
AR-1

GENERAL NOTES

GENERAL REQUIREMENTS

- DRAWING NOTES AND SPECIFICATIONS ARE INSTRUCTIONS TO THE CONTRACTOR AND APPLY GENERALLY TO ALL THE WORK UNLESS MORE SPECIFIC INFORMATION IS SHOWN ELSEWHERE ON THE DRAWINGS OR WRITTEN IN THE SPECIFICATIONS.
- THE WORK SHALL CONFORM TO THE NJ UNIFORM CONSTRUCTION CODE (NUCC) AND ALL APPLICABLE STATE OR LOCAL CODES.
- THE CONTRACTOR SHALL COORDINATE THESE STRUCTURAL DRAWINGS WITH ARCHITECTURAL, MECHANICAL, ELECTRICAL, CIVIL, AND OTHER DRAWINGS SUPPLIED BY OWNER. WHERE DISCREPANCIES EXIST BETWEEN STRUCTURAL AND OTHER DRAWINGS, THE CONTRACTOR SHALL NOTIFY THE STRUCTURAL ENGINEER IMMEDIATELY AND WAIT FOR INSTRUCTION.
- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD.
- BEFORE PROVIDING A BID, THE CONTRACTOR SHALL VISIT THE SITE AND REVIEW EXISTING CONDITIONS TO FULLY UNDERSTAND THE SCOPE OF THE WORK.
- IF CONDITIONS ENCOUNTERED DURING CONSTRUCTION DIFFER FROM WHAT IS SHOWN ON THE CONTRACT DRAWINGS, THE STRUCTURAL ENGINEER SHALL BE NOTIFIED IMMEDIATELY AND WORK SHALL NOT PROGRESS UNTIL ALL PROBLEMS ARE RESOLVED TO THE SATISFACTION OF THE STRUCTURAL ENGINEER.
- THE CONTRACTOR SHALL PROVIDE ALL SHORING AND BRACING REQUIRED TO MAINTAIN THE SAFETY AND STABILITY OF THE STRUCTURE THROUGHOUT CONSTRUCTION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL CONDITIONS AND MATERIALS WITHIN THE PROPOSED CONSTRUCTION AREA. THE CONTRACTOR SHALL PROVIDE ADEQUATE SHORING AND BRACING FOR ALL STRUCTURAL WORK. THE CONTRACTOR SHALL HAVE SOLE RESPONSIBILITY FOR ANY DAMAGE OR INJURIES CAUSED BY OR DURING THE EXECUTION OF THE WORK. THE STRUCTURAL ENGINEER SHALL NOT BE RESPONSIBLE FOR THE CONTRACTOR'S MEANS, METHODS, TECHNIQUES, SEQUENCES FOR THE PROCEDURE OF CONSTRUCTION, OR THE SAFETY PRECAUTIONS AND THE PROGRAMS INCIDENT THERETO (NOR SHALL OBSERVATION VISITS TO THE SITE INCLUDE INSPECTION OF THESE ITEMS).
- NOTES AND DETAILS ON THESE DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL STRUCTURAL NOTES. WHERE NO DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT.
- IN THE EVENT THAT DISCREPANCIES EXIST BETWEEN THE PROJECT SPECIFICATIONS AND THE GENERAL STRUCTURAL NOTES, WHERE POSSIBLE THE STRICTER OR MOST CONSERVATIVE REQUIREMENT SHALL BE FOLLOWED. IN ALL OTHER CASES THE CONTRACTOR SHALL INFORM THE STRUCTURAL ENGINEER AND AWAIT INSTRUCTION. DISCREPANCIES BETWEEN THE GENERAL STRUCTURAL NOTES AND THE PROJECT SPECIFICATIONS SHALL NOT BE PERMITTED AS A BASIS FOR THE CONTRACTOR'S FAILURE TO COMPLY WITH THE REQUIREMENTS OF THE PROJECT SPECIFICATIONS OR AS A BASIS FOR CLAIMS FOR ADDITIONAL WORK.
- WATERPROOFING CONTRACTOR TO BE LICENSED BY FIRESTONE BUILDING PRODUCTS, 200 4TH AVE SOUTH, NASHVILLE, TN 37201 PHONE: (800) 428-4442

CONCRETE

- COMPLY WITH THE LATEST EDITION OF THE STANDARD SPECIFICATION FOR STRUCTURAL CONCRETE IN BUILDINGS, ACI 301; AND THE BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE, ACI 318.
 - CONTRACTOR SHALL COORDINATE WITH WORK OF ALL OTHER TRADES AND WHERE REQUIRED INSTALL ALL BUILT-IN WORK, SLEEVES, INSERTS, ETC. AS REQUIRED. INSTALL ONLY STEEL, CAST IRON PIPE, OR PVC PIPE SLEEVES IN CONCRETE SLABS, BEAMS AND WALLS.
 - PROPORTION, MIX, AND PLACE CONCRETE UNDER THE SUPERVISION OF AN APPROVED CONCRETE CONTROL ENGINEER.
 - ALL STRUCTURAL MEMBERS SHALL BE POURED FOR THEIR FULL DEPTHS IN ONE OPERATION.
 - PROVIDE CONCRETE WITH 28 DAY COMPRESSIVE STRENGTHS FOR THE FOLLOWING USES:
- | USE | STRENGTH (PSI) |
|----------------------------|----------------|
| EXTERIOR SLABS | 4000 |
| ALL OTHER CONCRETE (U.N.O) | 3000 |
- CONTRACTOR SHALL SUBMIT CONCRETE MIX REPORT WITH COMPRESSION TEST RESULTS TO STRUCTURAL ENGINEER FOR REVIEW PRIOR TO START OF FOUNDATION CONSTRUCTION. REPRESENTATIVE TEST CYLINDERS SHALL BE TAKEN FROM THE CONCRETE IN ACCORDANCE WITH CONCRETE SPECIFICATIONS. TESTING SHALL BE PERFORMED AT 7 AND 28 DAYS.
 - PROVIDE 6% (+/-1%) AIR ENTRAINED CONCRETE EXPOSED TO EARTH OR WEATHER.
 - MECHANICALLY VIBRATE ALL CONCRETE WHEN PLACED. MAXIMUM SLUMP OF 4 1/2" FOR CONCRETE WITHOUT PLASTICIZER. IF PLASTICIZER IS USED, A HIGHER FINAL SLUMP MAY BE ALLOWED UPON APPROVAL OF THE STRUCTURAL ENGINEER. NO FLY ASH ADDITIVE IS ALLOWED.
 - ALL EXPOSED EDGES OF CONCRETE ABOVE FINISHED FLOOR SHALL HAVE A 3/4" X 3/4" CHAMFER.

FORMED STEEL DECK

- PROVIDE STEEL DECK THAT MEETS THE AISI SPECIFICATION FOR THE DESIGN OF COLD FORMED STEEL STRUCTURAL MEMBERS AND THE SDI MANUAL OF CONSTRUCTION WITH STEEL DECK. ALL STEEL DECKS SHALL EXTEND A MINIMUM 2 SPANS.
- NEW DECK SHALL BE FASTENED TO THE EXISTING STEEL FRAMING WITH (4) 3/8" ϕ PUDDLE WELDS PER 35" WIDE DECK AT SUPPORTS AND (1) ITW BUILDEX #10-14 TEKS SCREW BETWEEN SUPPORTS AT SIDELAPS.

REINFORCING STEEL

- CONFORM TO THE MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES, ACI 315; THE STANDARD SPECIFICATION FOR STRUCTURAL CONCRETE IN BUILDINGS, ACI 301; AND THE BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE, ACI 318.
- PROVIDE WELDED WIRE FABRIC IN FLAT SHEETS MEETING THE STANDARDS OF ASTM A185.
- DO NOT CUT OR DISPLACE REINFORCING STEEL TO ACCOMMODATE THE INSTALLATION OF EMBEDDED ITEMS WITHOUT APPROVAL FROM THE STRUCTURAL ENGINEER.

DEMOLITION

- DEMOLITION WORK SHALL BE DONE IN STRICT CONFORMANCE WITH LOCAL AND STATE REGULATIONS. CONTRACTOR SHALL USE QUALIFIED, EXPERIENCED PERSONNEL FOR REMOVAL AND DEMOLITION OPERATIONS.
- REMOVED MATERIALS SHALL BE DISPOSED FROM THE SITE IN ACCORDANCE WITH ALL APPLICABLE LAWS AND REGULATIONS.
- EXACT EXTENT OF DEMOLITION TO BE DONE SHALL BE VERIFIED AT THE SITE. DETERMINE THE NATURE AND EXTENT OF DEMOLITION THAT WILL BE NECESSARY BY COMPARING THE DRAWINGS WITH THE EXISTING CONDITIONS.
- PROVIDE ALL TEMPORARY BARRICADES, RAILINGS, LIGHTING, ETC. REQUIRED TO PROTECT THE WORKMEN AND OTHERS FROM INJURY DUE TO THE DEMOLITION WORK.
- PERFORM DEMOLITION WORK IN SUCH A MANNER AS TO PREVENT FIRES. REMOVE ALL ACCUMULATED DEBRIS PROMPTLY. DISPOSAL BY BURNING WILL NOT BE PERMITTED ON SITE. ALL DEBRIS SHALL BE DISPOSED OF IN A LEGAL WORKMANLIKE MANNER.
- THE CONTRACTOR SHALL PROVIDE ADEQUATE SHORING AND BRACING FOR ALL STRUCTURAL WORK. THE CONTRACTOR SHALL HAVE SOLE RESPONSIBILITY FOR ANY DAMAGE OR INJURIES CAUSED BY OR DURING THE EXECUTION OF THE WORK.
- THE CONTRACTOR IS FULLY RESPONSIBLE FOR THE MEANS AND METHODS OF DEMOLITION AND THE SAFETY OF THE EXISTING STRUCTURE.
- DEMOLITION SHALL BE PERFORMED WITHOUT THE USE OF HEAVY DEMOLITION EQUIPMENT.
- DO NOT REMOVE MORE OF THE EXISTING STRUCTURE THAN NECESSARY.
- ALL SALVAGEABLE MATERIALS AND EQUIPMENT INCLUDING FIXTURES, FURNISHINGS, AND DECOR ITEMS SHALL BE STORED AND PROTECTED FROM DAMAGE UNTIL THE OWNER DETERMINES THE COURSE OF ACTION TO BE TAKEN WITH SAME.
- NOTIFY AFFECTED UTILITY COMPANIES BEFORE STARTING WORK AND COMPLY WITH THEIR REQUIREMENTS.
- DISCONNECT PLUMBING AND ELECTRICAL WORK AS REQUIRED, CAP OFF UNUSED PLUMBING AND REROUTE FOR NEW WORK.

NEW JERSEY UNIFORM CONSTRUCTION CODE DATA
 BASED ON NUCC 5:23 CHAPTER 2 REHABILITATION SUBCODE AND
 THE 2018 INTERNATIONAL BUILDING CODE, NEW JERSEY EDITION)

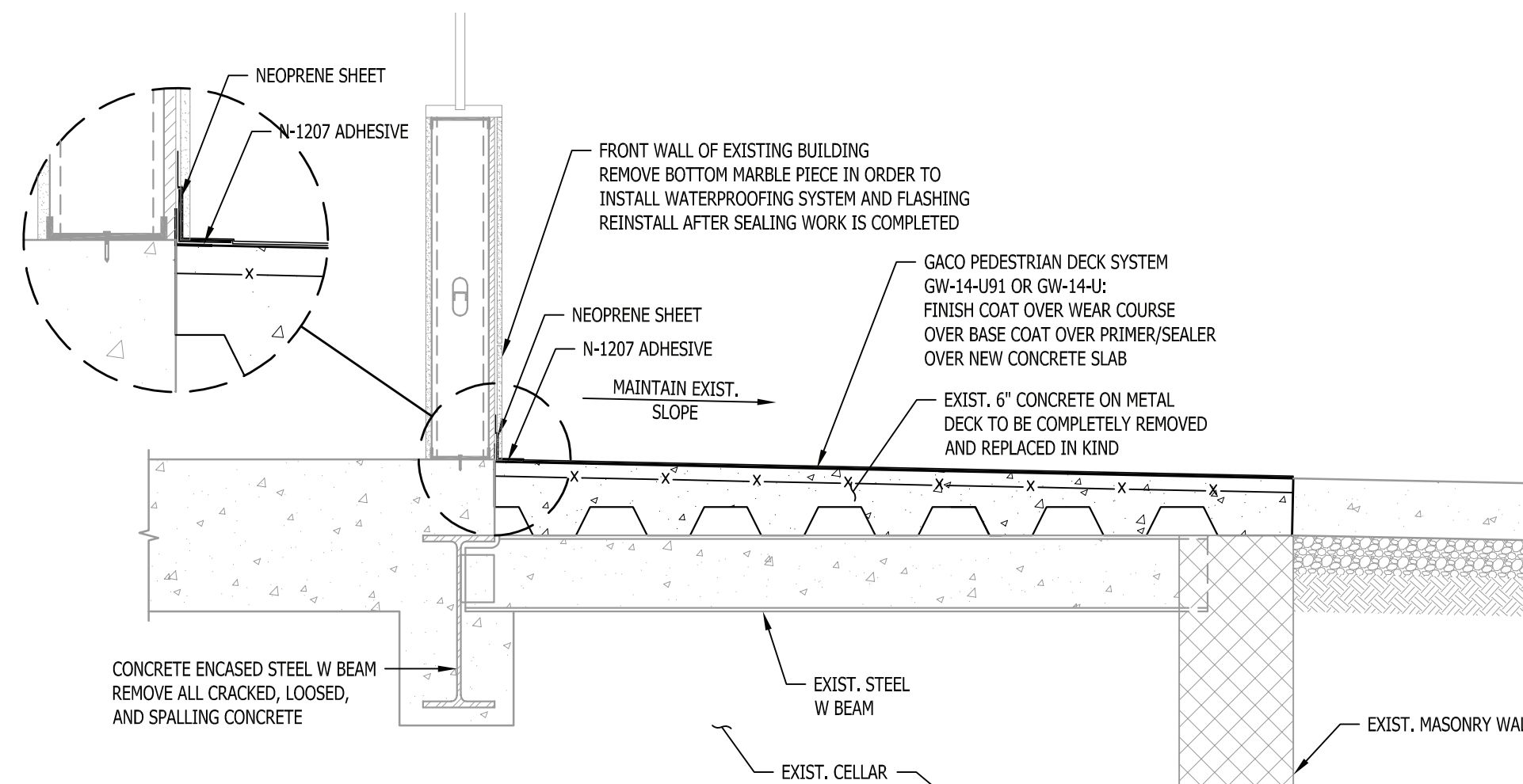
OCCUPANCY CLASSIFICATION: BUSINESS GROUP B
 CONSTRUCTION CLASSIFICATION: IA
 CATEGORY OF WORK: REPAIR



BUILDING FRONT SIDEWALK (FROM ABOVE)



BUILDING FRONT SIDEWALK (FROM BELOW)

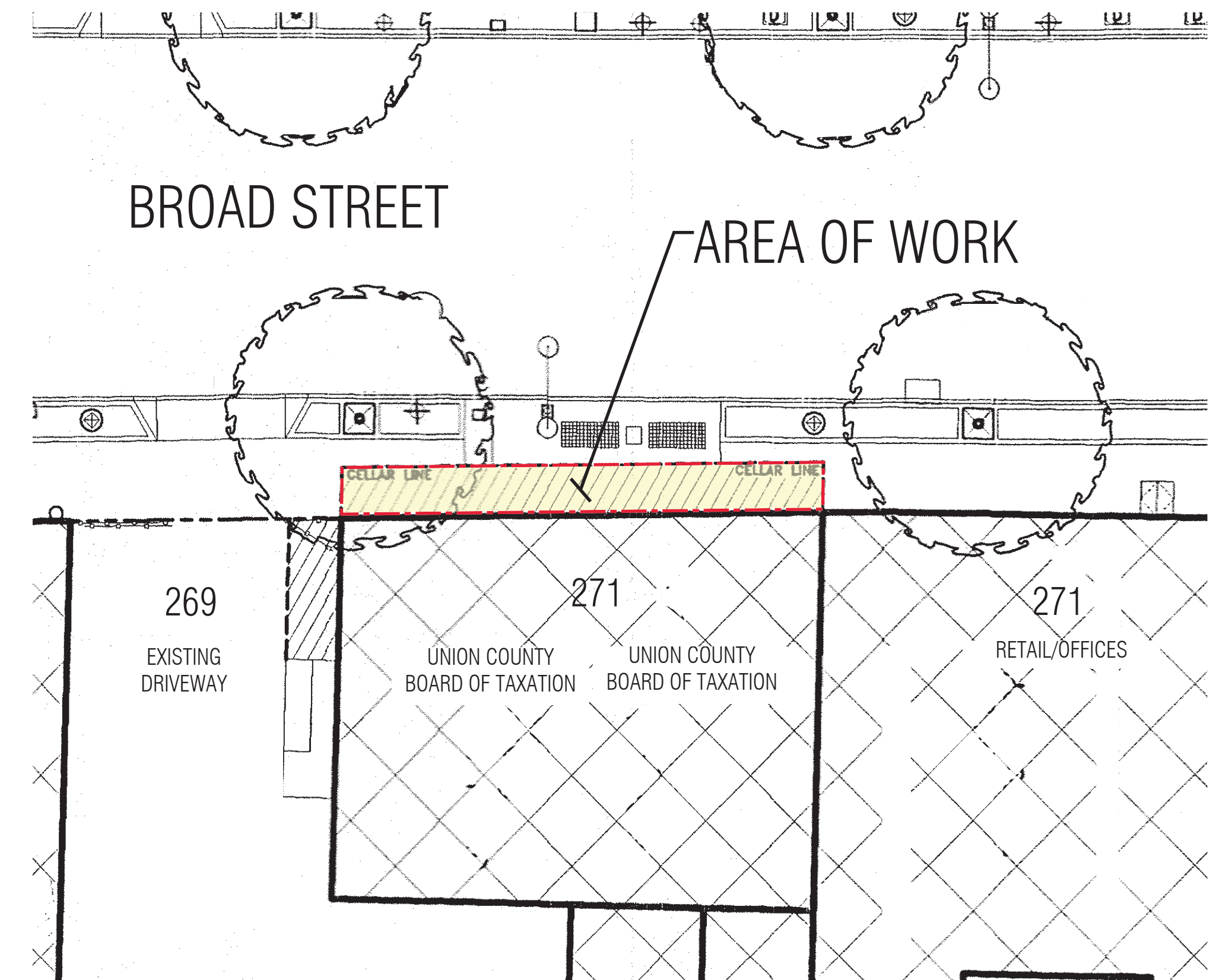


NOTES:

- THE CONTRACTOR MUST NOTIFY THE STRUCTURAL ENGINEER BEFORE REMOVING THE EXTERIOR WALL FINISH IN ORDER FOR THE STRUCTURAL ENGINEER TO BE PRESENT AND REVIEW THE EXISTING CONDITION OF THE WALL SHEATHING AND STRUCTURE. THE CONTRACTOR, IN COLLABORATION WITH THE PRODUCT MANUFACTURER, SHALL PROVIDE A FINAL DETAILED SKETCH SHOWING THE REPAIR PROCESS. THE REPAIR SKETCH SHALL BE REVIEWED AND APPROVED BY THE STRUCTURAL ENGINEER BEFORE THE REPAIR WORK CAN BEGIN.
- THE STRUCTURAL ENGINEER WILL PERFORM A MINIMUM OF TWO ADDITIONAL VISITS DURING THE REPAIR WORK IN ORDER TO ENSURE COMPLIANCE WITH THE APPROVED DRAWINGS AND ANY APPROVED SHOP DRAWINGS.

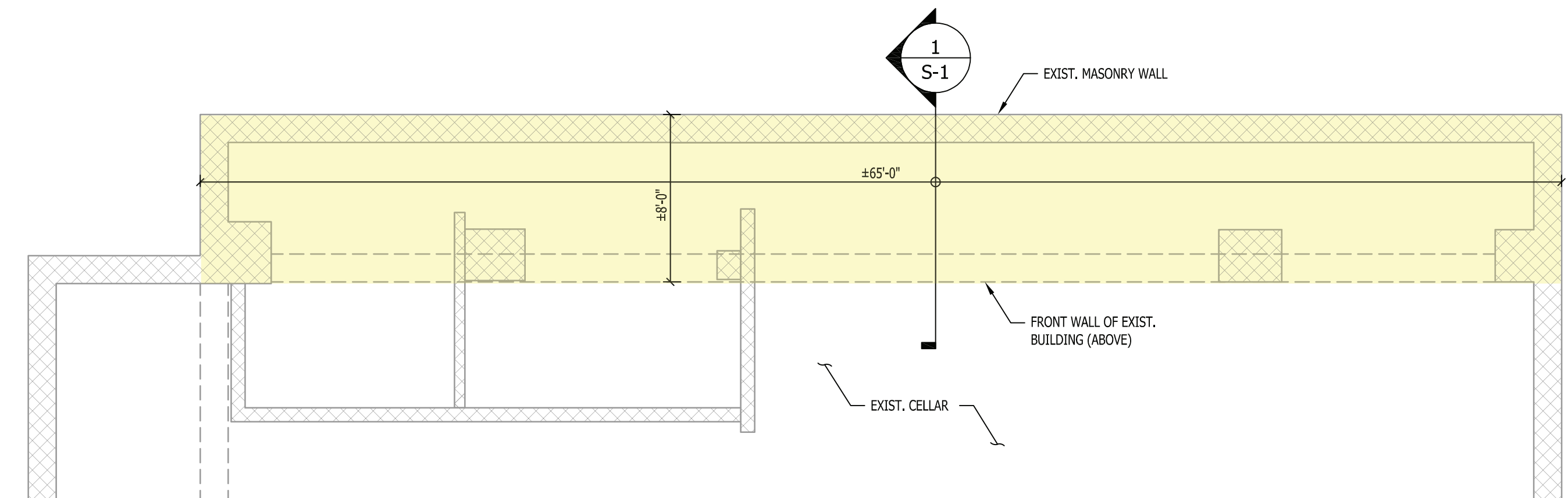
BUILDING FRONT SIDEWALK WATERPROOFING REPAIR

Scale: 3/4"=1'-0"



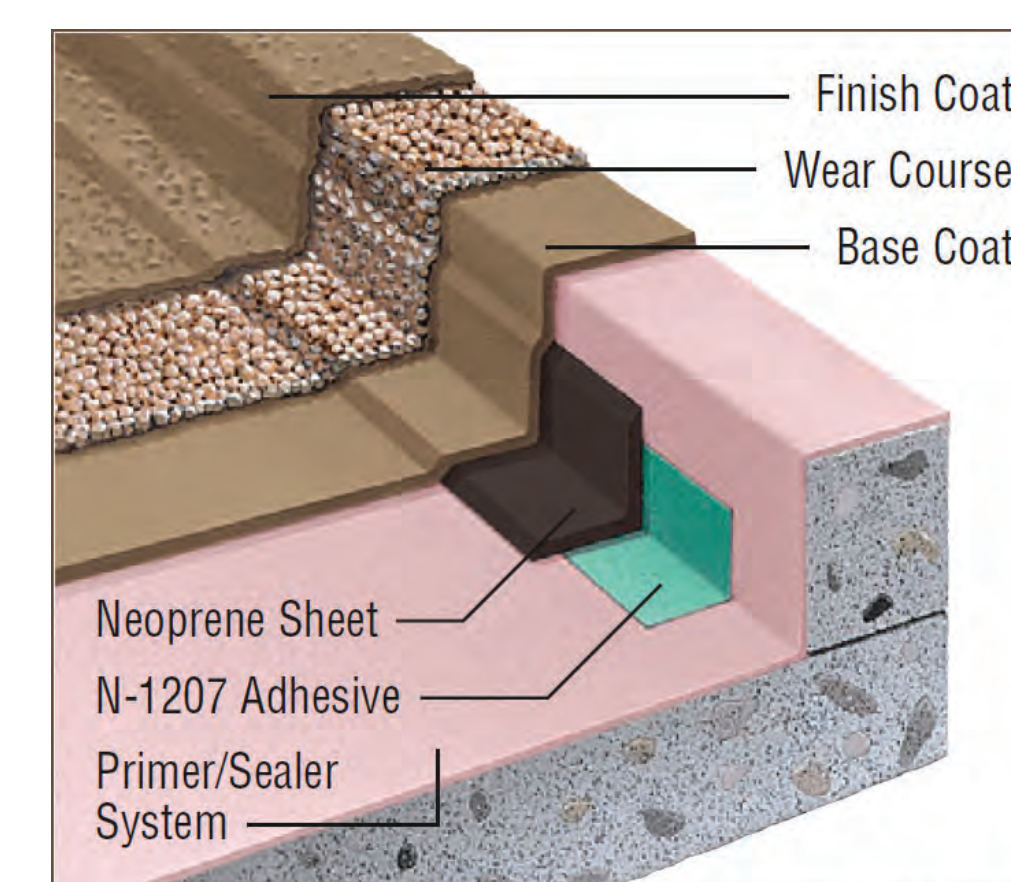
KEY PLAN

Scale: Not To Scale



EXIST. CELLAR PARTIAL PLAN

Scale: 1/4" = 1'-0"



GACO PEDESTRIAN DECK SYSTEM OVER CONCRETE (BROADCAST APPLICATION SHOWN)

PROJECT:
 Union Co. Board of Elections - Bldg. Leak Repair
 271 N Broad St
 Elizabeth, NJ 07208

TITLE:
PLANS, DETAIL, NOTES, AND PRODUCT SPECIFICATIONS

J. MEDINA ENGINEERING LLC

2 EXECUTIVE DR SUITE 100A, SOMERSET, NJ 08873
 PHONE: (732) 302-0402 FAX: (732) 965-2660

DRAWN BY: JOM	CHECKED BY: JOM
DATE ISSUED: 6/9/2021	SHEET NO. S-1

JARIB O. MEDINA, P.E.
 NJ LICENSE NO: GE44187