REQUEST FOR SEALED PROPOSALS

551 SOUTH 2nd STREET DEMOLITION SERVICES

SJPC-SSD-08102021

SOUTH JERSEY PORT CORPORATION

101 Joseph A. Balzano Boulevard

Camden, NJ 08103

Proposal Due Date: August 10, 2021 at 2:00pm EST

INFORMATION TO RESPONDENTS

Sealed proposals shall be received in accordance with Public Advertisement as required by law, a copy of said notice being attached hereto and made part of these specifications.

Project Site Pre-Bid Meeting

A recommended project on-site review and walk down meeting for all bidders for this project will be held at 551 SOUTH 2nd Street, Camden, NJ. All prospective bidders attending the pre-bid meeting shall check-in at the main entrance to the port at **101 Joseph A. Balzano Boulevard, Camden, NJ by 10 am on Tuesday, July 20th 2021**.

Submission of Proposals

All proposals must be submitted in sealed envelopes bearing on the outside the name of the proposer, address and the name of the professional service for which the proposal is submitted. Proposals must be addressed to the attention of:

SOUTH JERSEY PORT CORPORATION, c/o PATRICK BOYLE, SENIOR PURCHASING AGENT, 101 Joseph A. Balzano Boulevard (formerly Beckett Street), Camden, NJ 08103

Proposals Forwarded through the Mail must contain the following statement on the envelope:

"THIS IS A SEALED PROPOSAL AND SHALL NOT BE OPENED AND READ UNTIL AUGUST 10, 2021 AT 2:00PM EST BY PATRICK BOYLE, OR HIS DESIGNEE: SJPC-SSD-08102021

The South Jersey Port Corporation (hereinafter "SJPC") will not assume responsibility for proposals not delivered in person to the above address.

The sealed proposals will be opened and recorded at South Jersey Port Corporation's Balzano Marine Terminal, 101 Joseph A. Balzano Boulevard (formerly Beckett Street), Camden, New Jersey 08l03.

Receipt of Proposals

All proposals must be received by 2:00PM EST on August 10, 2021. No proposal will be accepted after the specified time.

Reservations

The SJPC reserves the right to reject any or all proposals, to waive irregularities and technicalities, to request re-submissions, and to award proposals as the SJPC deems will best serve the interests of the SJPC.

Questions regarding this Request for Proposals may be directed to Patrick Boyle, Senior Purchasing Agent at pboyle@southjerseyport.com. No questions will be answered after 5pm on July 29, 2021.

REQUEST FOR PROPOSALS

551 South 2nd STREET DEMOLITION SERVICES

OVERVIEW

The South Jersey Port Corporation (SJPC) is an agency of the State of New Jersey with a mission to develop, maintain and operate marine terminals and related intermodal transportation infrastructure within the South Jersey Port District. The agency has primary offices and port operations in Camden, New Jersey at the Balzano Marine Terminal and the Broadway Terminal. The agency also has facilities in Salem and Paulsboro. SJPC is grantee of Foreign Trade Zone #142.

http://southjerseyport.com/facilities/balzano-marine-terminal/

ADVERTISEMENT FOR BIDS

South Jersey Port Corporation
Request for Sealed Proposals for
551 SOUTH 2nd Street Demolition Services

Notice is hereby given that sealed Proposals for 551 SOUTH 2nd Street Demolition Services, pursuant to N.J.S.A. 19:44A-20.7, will be received by the South Jersey Port Corporation (herein after "SJPC"). Four (4) original sealed copies of each firm's proposals shall be submitted to Patrick Boyle, Senior Purchasing Agent, South Jersey Port Corporation, 101 Joseph A. Balzano Boulevard (formerly Beckett Street), Camden, NJ 08103, by August 10, 2021 on 2:00pm EST at which time the sealed proposals will be opened and recorded.

A Pre-Bid meeting will be held at the Balzano Marine Terminal, 101 Joseph A. Balzano Blvd., Camden, NJ 08103 on July 20, 2021 at 10:00am EST. Participants planning to attend the Pre-Bid Meeting must notify in advance Patrick Boyle, Senior Purchasing Agent by e-mail at pboyle@southjerseyport.com

Each submission to be considered shall comport to the criteria set forth in the proposal packets. The proposal packets may be obtained from SJPC at http:///www.southjerseyport.com or upon request to: South Jersey Port Corporation, Attention: Patrick Boyle, Senior Purchasing Agent, 101 Joseph A. Balzano Boulevard (formerly Beckett Street), Camden, NJ 08103 or by calling 856-757-4950.

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 et seq.

SCOPE OF WORK

The South Jersey Port Corporation is soliciting bids for the provision of demolition and subsequent site restoration services related to the site and its structures located at 551 South 2nd Street, Camden, NJ. The site's structures are vacant and have not been in use for several years. The building is not considered safe for habitation. A Pre-Demolition Environmental Assessment Report has been performed by Omega Environmental, Inc. which indicates the presence of asbestos, lead based paint, and other environmentally hazardous materials. The report of findings is included herein as an attachment.

Bids for these Demolition Services must meet all technical requirements, included herein and on the following plan documents:

C-1 - Site Demolition and Restoration Plan.

C-2 – Soil Erosion and Sediment Control Plan, Notes and Details

C-3 – Construction Details

The contractor shall be aware of and include in their bid the following special considerations which are to be inclusive in the scope of services:

1. Locations of subsurface utilities are not known. It is believed that utility services to the building adjacent to and west of the subject building (which is to remain) run from South 2nd Street, through the project area, and into the building to remain. The utilities may be beneath the building to be demolished. Utility services to this building to remain must be maintained.

2. The building contains asbestos, lead, and PCB materials. A Hazardous Waste Screening is included in this RFP. Contractor shall be responsible for the means and methods for the complete removal and disposal of all Hazardous Materials prior to or in conjunction with the demolition work.

3. Continuous overhead runway beams span between the building to remain and the building to be demolished. These overhead runway beams shall be removed up to the face of the building to remain in such a manner that the structural integrity of the building to remain

and the remaining overhead runway beams is maintained. A detailed plan of action, signed and sealed by a NJ PE shall be provided prior to removal.

4. At the east side of the subject building, adjacent to South 2nd Street, a basement area is present as indicated on the plans. Remnants of a coal fired boiler are believed to be within this area, however, access was limited due to safety concerns. Contractor shall be responsible for removal of this area and its contents as well as all foundations and footings for the building. Foundation remnants shall not be left in the ground.

5. Contractor is notified that the City of Camden requires the removal of service laterals to their servicing mains. No utilities shall be abandoned in place or filled with flowable fill.

6. Maintain port security perimeter fencing at all times. Permanent fencing shall be installed along the west side of the building to be demolished prior to the start of the demolition work.

Refer to Appendix A for Technical Specifications.

Refer to Appendix B for a copy of the Pre-Demolition Environmental Assessment Report.

Contractor to provide a lump sum proposal in US dollars to supply all necessary design services, materials, labor, tools, consumables, transportation, water craft, cranes, supervision, PPE, all materials and material controls, and any temporary facilities as necessary to provide for the complete and functional repair and replacement as described.

WARRANTY

Contractor shall provide a warranty covering equipment, material, and workmanship for a minimum of one year, starting from completion and acceptance of the installed components.

BID BOND

The Form of Bid Security shall be a BID BOND to accompany the BID Proposal Package in the amount of 10% of the total bid price not to exceed $20,000.

PERFORMANCE BOND

Each bid shall also be accompanied by a letter of intent from the Bidder's Bonding Company confirming that, if the Bidder is awarded the Contract, the Bonding Company will furnish the required PERFORMANCE BOND EQUAL TO THE BID PRICE.

Each Surety submitted must be with a company that is rated at least A- or better with AM Best and proof of same must accompany the bid.

SUBMISSION/PROPOSAL REQUEST

The proposal should include:

1. Letter of Transmittal – The letter is not intended to be a summary of the proposal itself and must contain the following statements and information:
    a. Company name, address, and telephone number(s) of the firm submitting the proposal.
    b. Name, title, address, e-mail address, and telephone number of the person or persons to contact who are authorized to represent the firm and to whom correspondence should be directed.
    c. Federal and state taxpayer identification numbers of the firm.
    d. Briefly state your understanding of the services to be performed and make a positive commitment to provide the services as specified.
    e. The letter must be signed by a corporate officer or other individual who is legally authorized to bind the applicant to both its proposal and cost schedule.
    f. Statement which indicated "proposal and cost schedule (see #7) shall be valid and binding for ninety (90) days following proposal due date and will become part of the contract that is negotiated with the SJPC."
    g. General Vendor Information- Please provide the following information:
        i. Length of time in business
        ii. Length of time in business of providing proposed services
        iii. Total number of clients
        iv. Total number of public sector clients
        v. Number of full-time personnel in:
            1. Consulting
            2. Installation and training
            3. Sales, marketing and administrative
        vi. Location of headquarters and field offices

vii. Location of office which would service this account

2. Describe how your firm is positioned to provide the services listed above and provide a history of experience on providing similar services.

3. Describe your approach to providing these services and your methodology for providing ongoing support.

4. Provide the name, title, address and telephone number of three references for clients whom you have provided similar services. Please provide information referencing the actual services provided, customer size (number of users), and the length of tenure providing services to this client.

5. Staff Resources – Identify names of principals and key personnel who will perform the work.

6. The SJPC facilities are federally regulated under the Maritime Transportation Security Act and onsite vendor representatives must possess a Transportation Worker Identification Credential (TWIC) issued by the Transportation Security Administration.

7. Cost Schedule: Provide a cost schedule for work identified under the "SCOPE OF WORK" section and a project schedule.

ADDITIONAL APPLICANT RESPONSIBILITIES IN RESPONDING TO PROPOSALS

The applicant/proposer shall, in response to the SJPC's Request for Proposal, also include the following information as indicated on the Web Site Bid Page:

a) Insurance. The proposer shall provide documentation of insurance for liability coverage with limits as to liability of not less than $1,000,000.

b) Small Business Enterprise Questionnaire. The applicant/proposer shall submit a completed form (exhibit Q1).

c) Mandatory Equal Opportunity. The applicant/proposer shall submit a completed form (exhibit Q2 and Q3).

d) Stockholder Disclosure Certificate. The applicant/proposer shall submit a completed form (exhibit Q4).

e) Non-Collusion Affidavit. The applicant/proposer shall submit a completed form (exhibit Q5).

f) Debarred List Affidavit. The applicant/proposer shall submit a completed form (exhibit Q6).

g) Affirmative Action Evidence for Procurement. The applicant/proposer shall submit a completed form (exhibit Q7).

h) Business Registration Certificate. The applicant/proposer shall submit a completed form (exhibit Q8).

i) Set-Off State Tax. The applicant/proposer shall submit a completed form (exhibit Q9).

j) Acknowledgement of Receipt of Addenda Form. The applicant/proposer shall submit a completed form (exhibit Q10).

k) Executive Order #129 Vendor Disclosure Form. The applicant/proposer shall submit a completed form (exhibit Q11).

l) Executive Order #189 Vendor Code of Ethics Affidavit. The applicant/proposer shall submit a completed form (exhibit Q12).

m) Executive Order #117 Two Year Chapter 51/ Vendor Certification and Disclosure of Political Contributions. The applicant/proposer shall submit a completed form (exhibit Q13).

n) Executive Order #151 Contract Compliance. The applicant/proposer complete and submit form AA302 (exhibit Q14).

o) Employee Information Report. The applicant/proposer shall submit a completed form AA302 (exhibit Q15).

p) Ownership Disclosure Form. The applicant/proposer shall submit a completed form (exhibit Q16).

q) Prevailing Wage Notification. The applicant/proposer shall submit a completed form (exhibit Q17).

r) Public Workers Contract Registration. The applicant/proposer shall submit a completed form (exhibit Q18).

s) Buy American Notice. In the performance of the work under this contract, the contractor and all subcontractors shall use only domestic materials. (exhibit Q19).

t) Executive Order #117 Pay-to-Play Restrictions. The applicant/proposer shall submit a completed form (exhibit Q20).

INSURANCE REQUIREMENTS

Prior to the commencement of any work and until completion and final payment is made for the work / final acceptance of the work, the Contractor will provide and maintain the following minimum levels of insurance at Contractor's own expense. The cost of the required insurance shall be included in the Contractor's bid price and no adjustment shall be made to the contract price on account of such costs unless such approval is provided. The term Contractor shall include Subcontractors and Sub-Subcontractors of every tier. Contractor shall furnish Certificates of Insurance evidencing and reflecting

the effective date of coverage as outlined below. In no event shall Work be performed until the required evidence of Insurance is provided in accordance with these Contract Documents and is approved by South Jersey Port Corporation ("SJPC"). If found to be non-compliant, SJPC may purchase the required insurance coverage(s) and the cost will be borne by the Contractor through direct payment/reimbursement to SJPC or SJPC may withhold payment to the Contractor for amounts owed to them.

a) All insurance shall be procured from insurers permitted to do business in the State in which the project is taking place and having an A.M. Best Rating of at least "A-, Class VIII".

b) Contractor shall not have a Self Insured Retention (SIR) on any policy greater than $50,000, which is the responsibility of the Contractor. If Contractor's policy(ies) has a Self Insured Retention exceeding this amount, approval must be received from SJPC prior to starting work. In the event any policy includes an SIR, the Contractor is solely responsible for payment within the SIR of their policy(ies) and the Additional Insured requirements specified herein shall be provided within the SIR amount(s).

c) All insurance required herein, with the exception of the Professional Liability Insurance, shall be written on an "occurrence" basis. Claims-Made coverage must include:

    i. The retroactive date must be on or prior to the start of work under this contract; and
    ii. The Contractor must purchase "tail coverage/an extended reporting period" or maintain coverage for a period of three years, subsequent to the completion of their work / final payment.

d) The Contractor's insurance carrier (s) shall agree to provide at least thirty (30) days prior written notice to SJPC in the event coverage is canceled or non-renewed, except in the case of non-payment of premium which is ten (10) days. In the event of cancellation or non-renewal of coverage(s), it is the Contractor's responsibility to replace coverage to comply with the Contract requirements so there is no lapse of coverage for any time period.

    In the event the insurance carriers will not issue or endorse their policy(s) to comply with the above it is the responsibility of the Contractor to report any notice of cancellation or non-renewal at least thirty (30) days prior to the effective date of this notice.

e) Contractor shall provide SJPC with Certificates of Insurance, evidencing the insurance coverages listed below, ten days prior to the start of work and thereafter upon renewal or replacement of each coverage. The Contractor shall not begin any work until SJPC has reviewed and approved the Certificate of Insurance. The required insurance shall not contain any exclusions or endorsements, which are not acceptable to SJPC.

    Failure of SJPC to demand such certificate or other evidence of full compliance with these insurance requirements or failure of SJPC to identify a deficiency from evidence

that is provided shall not be construed as a waiver of Contractor's obligation to maintain such insurance.

With respect to insurance maintained after final payment in compliance with a requirement below, an additional certificate(s) evidencing such coverage shall be provided to SJPC with final application for payment and thereafter upon renewal or replacement of such insurance until the expiration of the time period for which such insurance must be maintained.

f) Owner/Client and SJPC, (including SJPC's Parent, Subsidiaries, and Affiliates) shall be added as ADDITIONAL INSUREDS on all liability policies (except Workers' Compensation and Professional Liability Policy, where applicable), for ongoing operations and completed operations (using ISO Endorsements CG 2010 and CG 2037, or their equivalents) on a primary noncontributory basis. Coverage to include ongoing and completed operations. Each of the Additional Insured's respective directors, officers, partners, members, employees, agents and representatives shall also be afforded coverage as an Additional Insured. Coverage should be provided for a period of three years subsequent to the completion of work/final payment.

   If you are operating in a state that has implemented the "Anti-Indemnity" Additional Insured Endorsements, you are required to provide the state specific additional insured endorsements for ongoing and completed operations. These states include but are not limited to: Montana, New Mexico, Oregon, Colorado, Kansas, California, Louisiana, and Texas.

   SJPC reserves the right to require Contractor to name other parties as additional insureds as required by SJPC.

   There shall be no "Insured versus Insured Exclusion" on any policies(other than "Named Insured versus Named Insured"); all policies will provide for "cross liability coverage" as per standard ISO policy forms.

g) Waiver of Rights of Subrogation: Contractor shall waive all rights of recovery against Owner/Client, SJPC and all the additional insureds for loss or damage covered by any of the insurance maintained by the Contractor.

h) The amount of insurance provided in the required insurance coverages, shall not be construed to be a limitation of the liability on the part of the Contractor.

i) The carrying of insurance described shall in no way be interpreted as relieving the Contractor of any responsibility or liability under the contract.

j) Any type of insurance or any increase in limits of liability not described above which the Contractor requires for its own protection or on account of statute shall be its own expense.

k) Contractor shall promptly notify SJPC and the appropriate insurance company(ies) in writing of any accident(s) as well as any claim, suit or process received by the Contractor

arising in the course of operations under the contract. The Contractor shall forward such documents received to his insurance company(ies), as soon as practicable, or as required by their insurance policy(ies).

REQUIRED COVERAGES - the following may be provided through a combination of primary and excess policies in order to meet the minimum limits set forth below:

Workers' Compensation and Employer's Liability:

Provided in the State in which the work is to be performed and elsewhere as may be required and shall include:

a) Workers' Compensation Coverage: Statutory Requirements

b) Employers Liability Limits not less than:

Bodily Injury by Accident:	$100,000 Each Accident
Bodily Injury by Disease:	$100,000 Each Employee
Bodily Injury by Disease:	$500,000 Policy Limit

c) USL&H, Maritime Liability, FELA, and DBA Coverage, if applicable.

d) Includes coverage for sole proprietors, partners, members or officers who will be performing the work.

e) Where applicable, if the Contractor is lending or leasing its employees to SJPC for the work under this contract (e.g. crane rental with operator), it is the Contractor's responsibility to provide the Workers Compensation and Employer's Liability coverage and to have their policy endorsed with the proper Alternate Employer Endorsement in favor of SJPC.

Commercial General Liability:

Provided on ISO form CG 00 01 04 13 or an equivalent form including Premises - Operations, Independent Contractors, Products/Completed Operations, Broad Form Property Damage, Contractual Liability, and Personal Injury and Advertising Injury.

a) Occurrence Form with the following limits:

(1)	General Aggregate:	$2,000,000
(2)	Products/Completed Operations Aggregate:	$2,000,000
(3)	Each Occurrence:	$1,000,000
(4)	Personal and Advertising Injury:	$1,000,000

b) Products/Completed Operations Coverage must be maintained for a period of at least three (3) years after final payment / completion of work (including coverage for the Additional Insureds as set forth in these Insurance Requirements).

c) The General Aggregate Limit must apply on a **Per Project basis**.

d) No Exclusions for residential construction with respect to the work to be completed by the Contractor.

e) Coverage for "Resulting Damage".

f) No sexual abuse or molestation exclusion.

g) No amendment to the definition of an "Insured Contract".

h) The definition of an "Insured Contract" must be amended to provide coverage for all work on or within 50 feet of a railroad, if applicable. A stand alone Railroad Protective Liability policy may be required based on the scope of this project.

Automobile Liability:

a) Coverage to include All Owned, Hired and Non-Owned Vehicles (or "Any Auto"), if you do not have any Owned Vehicles you are still required to maintain coverage for Hired and Non-Owned Vehicles as either a stand alone policy or endorsed onto the Commercial General Liability policy above

b) Per Accident Combined Single Limit $1,000,000

c) For Contractor(s) involved in the transportation of hazardous material, include the following endorsements: MCS-90 and ISO-9948.

Commercial Umbrella Liability:

a) Policy(ies) to apply on a Following Form Basis of the following:
   (1) Commercial General Liability,
   (2) Automobile Liability, and
   (3) Employers Liability Coverage.

b) Minimum Limits of Liability
   Occurrence Limit: $10,000,000
   Aggregate Limit (where applicable): $10,000,000

Rigger's Liability Insurance:

(FOR THE **CONTRACTOR** FURNISHING THE MATERIAL HOIST SERVICE)

a) "All Risk" Replacement Cost Coverage

b) No overload exclusion

c) Minimum Occurrence Limit: $1,000,000

Pollution Liability Insurance:

(FOR THE **CONTRACTOR'S** INVOLVED IN THE REMOVAL, TRANSPORTATION AND/OR DISPOSAL OF HAZARDOUS MATERIALS)

a) Covering losses caused by pollution incidents that arise from the operations of the Contractor and /or their subcontractors of any tier.

b) Minimum Limits of Liability:
   Occurrence Limit: $5,000,000 per project
   Aggregate Limit: $5,000,000 per project

c) Insurance to be maintained for the duration of the work and for a period of three (3) years after completion of work / final payment.

d) No Exclusions for EIFS, Silica, Asbestos or Lead.

e) Include Mold Coverage for full policy limit of liability.

f) Shall include coverage for all pollutants as defined under the Resource Conservation and Recovery Act, as amended, 42 U.S.C. Section 6901 et. Seq. ("RCRA") or any related state or city environmental statute or the removal of any petroleum contaminated material at the project.

g) All owned and / or 3rd Party disposal facilities must be licensed and maintain pollution liability insurance of not less than $5,000,000, if applicable.

h) Any subcontractor doing actual environmental or abatement work shall adhere to the above requirements.

Professional Liability Insurance:

a) Minimum Limits of Liability

Per Claim Limit:	$5,000,000
Aggregate Limit:	$5,000,000

b) The Definition of "Covered Services" shall include the services required in the scope of this contract.

c) Coverage shall be extended to cover "Green Building", if applicable.

Owned, Leased, Rented or Borrowed Equipment:

(IF DESIGNATED BY **CONTRACTOR'S** SCOPE OF WORK)

Contractor shall maintain Property Coverage for:

a) their owned, leased, rented or borrowed equipment, tools, trailers, etc.; and

b) include a Waiver of Subrogation in favor of all Additional Insureds.

Indemnification:

1. The selected services provider will protect, defend, indemnify and hold harmless the South Jersey Port Corporation, including its respective directors, officers, partners, members, employees, agents and representatives from and against any and all losses, penalties, damages, settlements, costs, charges, professional fees or other expenses or liabilities arising out of or resulting from the performance of the work or the completed operations provided that any such claims, damage, loss or expense is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of the tangible property including the loss of the use resulting there from; and is caused in whole or in part by any negligent or willful act or omission of the Contractor, Subcontractor(s), Sub-subcontractor(s), and anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable.

2. In any and all claims against the South Jersey Port Corporation or any of their respective directors, officers, partners, members, employees, agents and representatives, by an employee of the selected services provider, Contractor, Subcontractor, or any Sub-subcontractor, or anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, the indemnification obligation shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for any Contractor, Subcontractor or any Sub-subcontractor under Workmen's Compensation Acts, Disability Benefits Acts, or other Employee.

EXAMINATION AND RESPONSIBILITY

Bidders should become thoroughly aware of the conditions under which the work will be performed. A Pre-Bid Meeting will be held to orient potential bidders of the project site. Attendance of the Pre-Bid Meeting strongly recommended.

Questions raised by Bidders shall be in writing and will only be officially answered by the issuance of Addenda to all bidders. Only such Addenda will be considered part of the Contract Documents.

Bidders must carefully examine, for themselves, the plans, detailed drawings, estimated quantities and the location of the proposed work, if applicable. They shall exercise their own judgement as to the full scope and nature of the work, the difficulties to be encountered and the accuracy of estimated quantities, when given. Each Bidder will be held fully responsible for having complied with, and thoroughly understood the Contract Documents prior to submitting their bid; and shall not, at any time, thereafter complain of such estimates, nor assert that there was any misunderstanding in regard to the nature or amount of work to be done.

QUALIFICATIONS OF BIDDERS

The Owner may make such investigation, as is deemed necessary, to determine the ability of the Bidder to perform the work; and the Bidder shall furnish to the Owner all such information and data for this purpose as the Owner may request. The Owner reserves the right to reject any bid if the evidence submitted by, or the investigation of such Bidder fails to satisfy the Owner that such Bidder is properly qualified to carry out the obligations of the Contract, and to complete the work therein contemplated. Conditional bids will not be accepted. See also paragraphs in these documents relating to subcontract work.

SUBMISSION OF BIDS

Bids must be submitted at the specified time due in sealed envelopes bearing the name and address of the Bidder on the outside, and also bearing, on the outside, reference to work bid upon. Any bid may be

submitted or withdrawn prior to the scheduled time for the opening of bids, or the authorized postponement thereof. Any bid received after the time and date specified in the Advertisement for Bids or Addenda will not be considered. No Bid may be withdrawn within sixty (60) days after the actual date of the opening thereof.

REJECTION OF BIDS

The Owner reserves the right to reject any or all Bids received. The Owner also reserves the right to receive any and all Bids in whatsoever form they may be, and to waive any informalities in said Bids; or to award the work to whichever Bidder or Bidders it may be considered advantageous so to do, regardless of Bid prices.

SUBCONTRACT WORK

The Bidder shall submit with their Bid, a description of Contract Work they will not be performing with their organization, if any.

OBLIGATIONS OF BIDDERS

At the time of the opening of Bids, each Bidder will be presumed to have inspected the site, and to have read, and to be thoroughly familiar with the Plans and Contract Documents, including all Addenda. The failure or omission of any Bidder to receive or examine any form, instrument, or document, shall in no way relieve the Bidder from any obligations in respect to their bid.

CONDITION OF WORK

Each Bidder must inform themselves fully of the conditions relative to the construction under which the work will be performed. Failure to do so will not relieve a successful Bidder of their obligation to furnish all material and labor necessary to carry out the provisions of the Contract Documents, and to complete the contemplated work for the construction set forth in their Bid.

PROJECT SCHEDULE

At, or prior to, Contract Award, the Contractor will submit to the Engineer, for approval, a complete schedule for the performance of the contract, incorporating all conditions of the contract, and separating the various segments of work.

LIQUIDATED DAMAGES

In case the Contractor fails to complete the work contracted for, in a manner satisfactory to and acceptable to the Owner, within the stipulated time limit, then the Contractor shall and will pay to the Owner for each and every day they, the Contractor, shall be in default, the sum of Two Thousand Dollars ($2,000.00) or the sum equal to 1/20 of one percent (1%) of the total consideration provided for under the contract, whichever sum if the greater, which sum per day is agreed upon, fixed and determined by the parties hereto to be liquidated damages, not a penalty.

The Owner shall recover said damages by deducting the amount thereof out of any monies which may be due or become due to Contractor, or by an action of law against the Contractor or their surety, or by either or both of these methods.

In case the Contractor shall be delayed due to the failure on the part of the Owner to furnish anything on its part to be furnished, or of any other cause beyond the control of the Contractor, they shall be entitled to such an extension of time for the delivery of equipment, materials, work and supplies as is the judgement of the Owner shall be fair and just.

FINANCIAL DISCLOSURE

The Applicant/Proposer shall file all Financial Disclosure Statements as required by Law.

EVALUATION OF RESPONSES

Method

The proposal review team will consist of individuals from the SJPC who will independently analyze each proposal. The evaluation team will analyze how the Respondents qualifications, experience, professional content and proposed methodology meet the SJPC's needs. Proposals should be prepared simply and economically, providing straightforward, concise description of the Vendor's capabilities to satisfy the requirements of this request.

Criteria

It is the policy of the SJPC that the selection of vendors shall be on the basis of demonstrated competence and on the professional qualifications necessary for the satisfactory performance of the services required. The SJPC will put each proposal submitted through a process of evaluation to determine responsiveness to all administrative and technical requirements of the RFP. Proposals will be evaluated primarily on cost/cost effectiveness, but the respondent's qualifications, experience, project approach, and methodology may also be considered when evaluating the responsibility of a bid.

The evaluation criteria are intended to be used to make a recommendation to the SJPC Board of Directors, who will award the contract, but who are not bound to use the criteria or to award to Respondent on the basis of the recommendation. Furthermore, the SJPC reserves the right to vary from this procedure as it determines to be in the SJPC's best interest.

Additional Information

The SJPC reserves the right to reject any or all proposals and to waive informalities and minor irregularities in proposals received if deemed in the best interest of the SJPC to do so. A final decision will be made only after all proposals have been received and evaluated and presented to the SJPC Board of Directors for consideration. The SJPC's evaluation process is designed to identify the vendor that provides the most advantageous solution to the SJPC by including an evaluation of each vendor's technical capabilities, past performance, and overall cost of the proposal to the SJPC.

In order to be considered, four (4) hard copies of the Proposal must be received by the SJPC in a sealed envelope marked:

"THIS IS A SEALED PROPOSAL AND SHALL NOT BE OPENED AND READ UNTIL AUGUST 10, 2021 AT 2:00P.M. BY PATRICK BOYLE OR HIS DESIGNEE: RFP Title; and addressed to the South Jersey Port Corporation, Attention: PATRICK BOYLE, Senior Purchasing Agent, 101 Joseph A. Balzano Boulevard (formerly Beckett Street), Camden, NJ 08103.

SEALED Proposals may be mailed or hand delivered to: SJPC: South Jersey Port Corporation, Attention: Mr. Patrick Boyle, Senior Purchasing Agent, 101 Joseph A. Balzano Boulevard (formerly Beckett Street), Camden, NJ 08103

An electronic copy may also be requested at a later date.

The SJPC reserves the right to make any and all decisions regarding the selection of the Project Team and to waive any formality and to take any action that the SJPC determines, in its sole discretion, to be in the best interest of the SJPC. The provisions of the RFP are made for the benefit of the SJPC, and no right shall be deemed to accrue to any person submitting a state of qualifications or proposal by reason of the submission of any statement of qualification or proposal, or by the waiver or non-enforcement of any provisions or requirements of the RFP or by reason of any term or terms thereof.

BID FORM

Having carefully examined the Contract Drawings and Technical Specifications for this project, and having examined all conditions affecting the work, the undersigned proposes to complete the work as set forth therein and to furnish all equipment, supervision, transportation, labor, materials and services required to execute the work in accordance with the Contract Drawings and Documents for the following Unit Price Costs, unless noted otherwise:

It is understood and agreed that any incidental work necessary to complete the Project in its entirety will be included in the line items, unit prices and lump sum bid, whether or not the line item or items shall specifically state the nature of the incidental work. The line item or items which the incidental work, and the incidental costs, are included shall be selected by the Bidder. It is also understood and agreed that each line item of work in the Proposal shall include all supervision and personnel costs, markups, and other costs envisioned by the Bidder. In other words, all line item costs bid shall be "all-inclusive". Therefore, the unit prices to be entered on the Bid Form are obtained by dividing the total cost bid to complete the line item by the quantity shown of the form. The bid shall be determined by adding all line item costs for all Bid Items under Base Bid. This grand total Base Bid Price shall constitute the Lump Sum Base Bid Cost of the Project.

Negotiations for the adjustments of the unit price of any item will be completed only when that item and other work or items affecting its quantity have been completed and the total net change in the quantity of such item can be ascertained with sufficient accuracy to determine if it be eligible for consideration in accordance with the foregoing provisions.

The bidder must also furnish a price for all Optional Bids or Alternates requested, as well as all separate unit price items requested. Failure to do so will constitute an incomplete bid, which will be rejected by the South Jersey Port Corporation.

A. Estimated Time Required to Complete All Work in Calendar Days: _____Days

   Bidder shall provide rough schedule, including estimated start and completion dates. All work shall be performed on weekdays during daylight hours. Work may be performed on Saturdays and/or other hours pending prior approval by South Jersey Port Corporation. In no case shall the project schedule extend beyond 120 Calendar Days from Notice to Proceed.

B. Provide a Field Organizational Chart with Names of Key Personnel

   _____

   _____

C. We Acknowledge Receipt of the Following Addenda

   Addendum no. _____ Dated: _____

   Addendum no. _____ Dated: _____

If no addenda are received, indicate by writing or typing the word "NONE" in the space for first addenda.

The Bidder proposes to complete the Work in Accordance with the Contract Documents at the prices set forth in the following Schedule of Prices:

No.	Title and Pay Basis	Amount
1	**Mobilization -** Task 1.	
	Lump Sum Price in Figures	$_____
	Lump Sum Price in Words	
2	**Demolition Services**	
	Task 2. As specified; to include install/maintain SESC measures, demolition of entire structure, basement & foundations, asphalt removal, proper disposal of all non-hazardous materials.	
	Lump Sum Price in Figures	$_____
	Lump Sum Price in Words	
3	**Hazardous Waste Removal Services**	
	Task 3. As specified; demolition and disposal of hazardous waste materials as identified in the Hazardous Waste Screening Report, or price increase to dispose of all materials as hazardous.	
	Lump Sum Price in Figures	$_____
	Lump Sum Price in Words	
4	**Site Restoration Services**	
	Task 4. As specified; backfilling of all areas to subgrade, site grading, placement of final cover material, fence and gate installation.	
	Lump Sum Price in Figures	$_____
	Lump Sum Price in Words	
5	**Total Price (Items 1 through 4)**	
	Total Lump Sum Price in Figures	$_____
	Total Lump Sum Price in Words	

The Contractor agrees that this proposal will be valid for a period of ninety (90) days to allow the Port time to evaluate the complete proposal to allow for the decision. The Port Engineer will officially notify the Contractor of the acceptance of their bid within ninety (90) days following the bid date pending compliance with delivering the requested documentation.

The undersigned accepts responsibility for having completely examined and understood the intent of the Bid Drawings and Documents; for having fully examined the site of the work; and for having obtained all pertinent information affecting the work.

Total Lump Sum Bid Price **$** _____

CORPORATE SEAL

Contractor: _____

Primary Contact Name: _____

By: _____

Title: _____

Date: _____

Business Address: _____

_____

Phone No.: _____

South Jersey Port Corporation
Application for TWIC Escort Sponsorship

In accordance with 33 CFR 101.514, all persons requiring unescorted access to restricted South Jersey Port Corporation (SJPC or "Port Corporation") facilities must possess a Transportation Worker Identification Credential (TWIC) before such access is granted. Persons seeking access to SJPC facilities who do not physcially possess a TWIC may only enter SJPC facilities with an SJPC approved TWIC escort as a side-by-side companion. Each designated TWIC escort will be allowed to escort a maximum of five (5) individuals at any one time.

The sponsoring employer making the nomination for TWIC escorts shall submit the application at least seven (7) days prior to assignment as a TWIC escort. Application shall include a full-size color copy of the TWIC of the nominated employee and certification of training as per 33 CFR 105.215. In addition, the sponsoring employer must certify that the nominated TWIC escort is a full-time employee of the company.

In requesting application for TWIC escorts, the sponsoring company assumes all responsibility for each nominated employee to meet the mandated TWIC escorting requirements relating to restricted area access and agrees to assume any liability imposed by competent Federal authorities for failure of such nominated employee to discharge all responsibilites in accordance with all federal law and policy.

Sponsoring Company Information

Company Name: _____

Contact Person: _____

Contact Person Title: _____

Address: _____

City, State, Zip: _____

Work Phone: _____

Mobile Phone: _____

Email Address: _____

Fax: _____
_____

NOTE: The applicant does not sign the TWIC Escort Sponsorhip form. The applicant only signs the training acknowledgement.

Nominated Employee Information

Full Name (First, Middle, Last): _____

Date of Birth (mm, dd, year): _____

Address: _____

City, State, Zip: _____

Work Phone: _____

Mobile Phone: _____

Email Address: _____

Fax: _____

Date Employed by Nominated Employer: _____

TWIC escorting privileges are granted at the sole discretion fo the SJPC, for a period determined by the SJPC, and the SJPC reserves the right to deny granting escorting privileges or to suspend, revoke or deny renewal of escorting privileges previously granted as follows:

1. Submittal by an employer or nominated applicant of false or misleading information.
    - Failure to adhere to the policies, rules and regluations of the SJPC or other applicable federal, state or local laws and regulations, including, but not limited to:
        - Any attempt to gain entrance to the SJPC's facilitiles, or restricted areas within its facilities, through fraud or deception;
        - Any attempt to bypass established entry points;
        - Use or attempted use of a credential issued to anyone other than the approved TWIC escort, or loaning of an approved TWIC escort credential to another person:
        - Failure to perform escorting duties in the manner prescribed in this policy.
2. Conviction of an approved TWIC escort of any offense for which he or she would have initially been denied approval in accordance with the policies of the Port Corporation.
3. Failure to present a TWIC upon request, loss of TWIC privileges or an expired TWIC,
4. An employer no longer meets the criteria under which their eligibility was initally established or an approved TWIC escort leaves the employment of the company for which escorting privileges were approved.
5. The **TWIC Escort privileged expire on the expiration of the TWIC card** provided when certificed. <u>When the ecort's TWIC expires, a new application and retrain is required with the renewal TWIC card</u>.

Submitted by:

Full Name (First, Middle, Last): _____

Title: _____

Date Submitted: _____

I certify that the applicant named in the application has received escort training as per 33 CFR 105.215.

_____
Signature

_____ _____
Name Printed *Date*

I certify that the applicant named in this application is a full-time employee of the sponsoring company named above.

_____
Signature

_____ _____
Name Printed Date

I certify to the best of my knowledge and belief that this application is correct and complete and I knowledge and accept all terms and conditions contained herein.

_____
Signature

_____ _____
Name (Printed) Date

ATTACH A COLOR COPY OF BOTH SIDES OF THE APPLICANT'S TWIC CARD.

Return completed Application for TWIC Escort Sponsorship, TWIC Escort Acknowledgment and the copy of the applicant's TWIC card to:

South Jersey Port Corporation
ATTN: Chuck O'Leary
Kevin Greenjack
P.O. Box 129
Camden, NJ 08101-0129

Or send via email as an attached PDF file to:

coleary@southjerseyport.com kgreenjack@southjerseyport.com

Questions regarding the SJPC TWIC Escort Training can be directed to the above.

Appendix A: Technical Specifications

PROJECT TECHNICAL MANUAL

SJPC - 551 S. 2nd Street Demolition

PS&S Project No: 03690.0001

551 South Second Street
Camden, New Jersey 08103

PREPARED FOR:

SJPC
101 Joseph A. Balzano Blvd
Camden, NJ 08103

TABLE OF CONTENTS

Scope of Work:

Introduction:

The South Jersey Port Corporation is soliciting bids for the provision of demolition and subsequent site restoration services related to the site and its structures located at 551 South 2nd Street, Camden, NJ. The site's structures are vacant and have not been in use for several years. The building is not considered safe for habitation. A Hazardous Waste Assessment has been performed by Omega Environmental, Inc. which indicates the presence of asbestos, lead based paint, and other environmentally hazardous materials. The report of findings is included herein as an attachment.

Bids for these Demolition Services must meet all technical requirements, included herein and on the following plan documents:

C-01 - Site Demolition and Restoration Plan.

C-02 – Soil Erosion and Sediment Control Plan, Notes and Details

C-03 – Construction Details

The contractor shall be aware of and include in their bid the following special considerations which are to be inclusive in the scope of services:

1. Locations of subsurface utilities are not known. It is believed that utility services to the building adjacent to and west of the subject building (which is to remain) run from South 2nd Street, through the project area, and into the building to remain. The utilities may be beneath the building to be demolished. Utility services to this building to remain must be maintained.

2. The building contains asbestos, lead, and PCB materials. A Hazardous Waste Screening is included in this RFP. Contractor shall be responsible for the means and methods for the complete removal and disposal of all Hazardous Materials prior to or in conjunction with the demolition work.

3. Continuous overhead runway beams span between the building to remain and the building to be demolished. These overhead runway beams shall be removed up to the face of the building to remain in such a manner that the structural integrity of the building to remain and the remaining overhead runway beams is maintained. A detailed plan of action, signed and sealed by a NJ PE shall be provided prior to removal.

4. At the east side of the subject building, adjacent to South 2nd Street, a basement area is present as indicated on the plans. Remnants of a coal fired boiler are believed to be within this area, however, access was limited due to safety concerns. Contractor shall be responsible for removal of this area and its contents as well as all

foundations and footings for the building. Foundation remnants shall not be left in the ground.

5. Contractor is notified that the City of Camden requires the removal of service laterals to their servicing mains. No utilities shall be abandoned in place or filled with flowable fill.

Scope of Services

The Contractor shall be required to provide sufficient and suitable labor, equipment, and materials in order to conduct and complete all the work of this Contract. The SJPC may have one or more on-site representatives who will monitor the Contractor's operations. The Contractor shall provide a full-time, on-site superintendent who can receive direction from the SJPC's representative.

Pre-Demolition Requirements:

1. Prior to commencing with demolition, the Contractor shall submit a Demolition Work Plan detailing means and methods and sequence of all work.
2. Secure all required permits in accordance with the City of Camden and any other applicable regulations.
3. Submit a Waste Management Plan detailing waste stream processing.
4. Develop a Health and Safety Plan (HASP).
5. Locate all subsurface utilities and their associated service connections.
6. Conduct a Pre-Construction Project Kickoff Meeting.

Hazardous material (asbestos, lead paint, etc.) has been identified in a study and associated report done by Omega Environmental, Inc and included in this document. This material to be abated prior to or in conjunction with the demolition as determined appropriate by the Contractor. The means and methods for abatement/disposal of this material is the responsibility of the Contractor and shall be indicated in the Proposal and the cost included in the Bid. Refer to Appendix B of the Bid Document for Hazardous Waste Screening Report.

Demolition Scope – The Contractor is to demolish and remove from the site the following elements located within the Demolition Limit Line as denoted on Drawing C-1.

1. Existing 3-story and connecting 1-story Masonry and Wood Buildings, including, but not limited to, the building structures, roofs, chimneys, walls, floors, fire exit structures, internal components and all basements and foundations.
2. Existing floor drains and servicing utilities.
3. Hydraulic lift and related structures.
4. Existing asphalt paving.
5. Existing boiler and masonry platform.
6. Overhead runway beams.
7. Existing trees and ground cover.

The existing chain link fences and gates shall be removed and or left in place in accordance with Drawing C-01.

Existing utility connections shall be removed to existing service main. In doing so, Contractor must submit for a road opening permit in order to gain access to the utilities. Upon completion of utility removal, the Contractor must repair and replace any disturbed and/or removed pavement.

There is an existing building on the west side of the parcel that is to remain. Overhead rails that tie the structures are to be removed back to the face of the structure to remain. The Contractor must verify the structural integrity of the extent of removal and prepare a submittal of the proposed rail removal.

Site Restoration Scope – Once site demolition scope has been completed and all demolition debris removed from the site, the Contractor shall clean the entire area within the Demolition Limit Line. Area shall be backfilled as required to 6" below final grade in accordance with the technical specifications. Final cover shall then be placed with ¾" Clean Stone, 6" deep. New fencing as shown on the plans to be installed.

Progress Meetings – The Contractor shall conduct weekly progress meetings with representatives of the SJPC and the Engineer. The meetings are to be held on site. The purpose of the meetings will be to discuss the prior week's activities as well as the following week's look ahead. Meeting Agenda and Minutes will also be required of the Contractor.

SECTION 017419 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 - GENERAL

1.1 DEFINITIONS

A. Construction Waste: Building, structure, and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.

B. Demolition Waste: Building, structure, and site improvement materials resulting from demolition operations.

C. Disposal: Removal of demolition or construction waste and subsequent salvage, sale, recycling, or deposit in landfill, incinerator acceptable to authorities having jurisdiction, or designated spoil areas on Owner's property.

D. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.

E. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.

F. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

1.2 MATERIALS OWNERSHIP

A. Unless otherwise indicated, demolition and construction waste becomes property of Contractor.

B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner.

1. Carefully salvage in a manner to prevent damage and promptly return to Owner.

1.3 WASTE MANAGEMENT PLAN

A. General: Develop a waste management plan according to requirements in this Section. Plan shall consist of waste identification, waste reduction work plan, and cost/revenue analysis. Distinguish between demolition and construction waste. Indicate quantities by weight or volume, but use same units of measure throughout waste management plan.

B. Waste Identification: Indicate anticipated types and quantities of demolition, site-clearing and construction waste generated by the Work. Use Form CWM-1 for construction waste and Form CWM-2 for demolition waste. Include estimated quantities and assumptions for estimates.

C. Waste Reduction Work Plan: List each type of waste and whether it will be salvaged, recycled, or disposed of in landfill or incinerator. Use Form CWM-3 for construction waste and Form CWM-4 for demolition waste. Include points of waste generation, total quantity of each type of waste, quantity for each means of recovery, and handling and transportation procedures.

1. Salvaged Materials for Reuse: For materials that will be salvaged and reused in this Project, describe methods for preparing salvaged materials before incorporation into the Work in compliance with Section 024116 "Structure Demolition." and Section 024119 "Selective Demolition."
2. Salvaged Materials for Sale: For materials that will be sold to individuals and organizations, include list of their names, addresses, and telephone numbers.
3. Salvaged Materials for Donation: For materials that will be donated to individuals and organizations, include list of their names, addresses, and telephone numbers.
4. Recycled Materials: Include list of local receivers and processors and type of recycled materials each will accept. Include names, addresses, and telephone numbers.
5. Disposed Materials: Indicate how and where materials will be disposed of. Include name, address, and telephone number of each landfill and incinerator facility.
6. Handling and Transportation Procedures: Include method that will be used for separating recyclable waste including sizes of containers, container labeling, and designated location where materials separation will be performed.

D. Cost/Revenue Analysis: Indicate total cost of waste disposal as if there were no waste management plan and net additional cost or net savings resulting from implementing waste management plan. Use Form CWM-5 for construction waste and Form CWM-6 for demolition waste. Include the following:

1. Total quantity of waste.
2. Estimated cost of disposal (cost per unit). Include transportation and tipping fees and cost of collection containers and handling for each type of waste.
3. Total cost of disposal (with no waste management).
4. Revenue from salvaged materials.
5. Revenue from recycled materials.
6. Savings in transportation and tipping fees by donating materials.
7. Savings in transportation and tipping fees that are avoided.
8. Handling and transportation costs. Include cost of collection containers for each type of waste.
9. Net additional cost or net savings from waste management plan.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. General: Achieve end-of-Project rates for salvage/recycling of 50 percent by weight of total nonhazardous solid waste generated by the Work. Practice efficient waste management in the use of materials in the course of the Work. Use all reasonable means to divert construction and demolition waste from landfills and incinerators. Facilitate recycling and salvage of materials, including the following:

1. Demolition Waste:

a. Asphalt paving.
b. Concrete.
c. Concrete reinforcing steel.
d. Brick.
e. Concrete masonry units.
f. Wood studs.
g. Wood joists.
h. Plywood and oriented strand board.
i. Wood paneling.
j. Wood trim.
k. Structural and miscellaneous steel.
l. Rough hardware.
m. Roofing.
n. Insulation.
o. Doors and frames.
p. Door hardware.
q. Windows.
r. Glazing.
s. Metal studs.
t. Gypsum board.
u. Acoustical tile and panels.
v. Carpet.
w. Carpet pad.
x. Demountable partitions.
y. Equipment.
z. Cabinets.
aa. Plumbing fixtures.
bb. Piping.
cc. Supports and hangers.
dd. Valves.
ee. Sprinklers.
ff. Mechanical equipment.
gg. Refrigerants.
hh. Electrical conduit.

ii. Copper wiring.
jj. Lighting fixtures.
kk. Lamps.
ll. Ballasts.
mm. Electrical devices.
nn. Switchgear and panelboards.
oo. Transformers.

2. Construction Waste:

a. Masonry and CMU.
b. Lumber.
c. Wood sheet materials.
d. Wood trim.
e. Metals.
f. Roofing.
g. Insulation.
h. Carpet and pad.
i. Gypsum board.
j. Piping.
k. Electrical conduit.
l. Packaging: Regardless of salvage/recycle goal indicated in "General" Paragraph above, salvage or recycle 100 percent of the following uncontaminated packaging materials:

1) Paper.
2) Cardboard.
3) Boxes.
4) Plastic sheet and film.
5) Polystyrene packaging.
6) Wood crates.
7) Wood pallets.
8) Plastic pails.

m. Construction Office Waste: Regardless of salvage/recycle goal indicated in "General" Paragraph above, salvage or recycle 100 percent of the following construction office waste materials:

1) Paper.
2) Aluminum cans.
3) Glass containers.

PART 3 - EXECUTION

3.1 PLAN IMPLEMENTATION

A. General: Implement approved waste management plan. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.

1. Comply with operation, termination, and removal requirements in Section 015000 "Temporary Facilities and Controls."

B. Waste Management Coordinator: Engage a waste management coordinator to be responsible for implementing, monitoring, and reporting status of waste management work plan. Coordinator shall be present at Project site full time for duration of Project.

C. Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work.

1. Distribute waste management plan to everyone concerned within three days of submittal return.
2. Distribute waste management plan to entities when they first begin work on-site. Review plan procedures and locations established for salvage, recycling, and disposal.

D. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

1. Designate and label specific areas on Project site necessary for separating materials that are to be salvaged and recycled.

E. Waste Management in Historic Zones or Areas: Transportation equipment and other materials shall be of sizes that clear surfaces within historic spaces, areas, rooms, and openings, by 12 inches or more.

3.2 SALVAGING DEMOLITION WASTE

A. Salvaged Items for Owner's Use: Salvage items for Owner's use and handle as follows:

1. Clean salvaged items.
2. Pack or crate items after cleaning. Identify contents of containers with label indicating elements, date of removal, quantity, and location where removed.
3. Store items in a secure area until delivery to Owner.

4. Transport items to Owner's storage area designated by Owner.
5. Protect items from damage during transport and storage.

B. Plumbing Fixtures: Separate by type and size.

3.3 RECYCLING DEMOLITION WASTE, GENERAL

A. General: Recycle paper and beverage containers used by on-site workers.

B. Preparation of Waste: Prepare and maintain recyclable waste materials according to recycling or reuse facility requirements. Maintain materials free of dirt, adhesives, solvents, petroleum contamination, and other substances deleterious to the recycling process.

C. Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site to the maximum extent practical according to approved construction waste management plan.

1. Provide appropriately marked containers or bins for controlling recyclable waste until removed from Project site. Include list of acceptable and unacceptable materials at each container and bin.

a. Inspect containers and bins for contamination and remove contaminated materials if found.

3.4 RECYCLING DEMOLITION WASTE

A. Asphalt Paving: Grind asphalt to maximum 1-1/2-inch size.

B. Asphalt Paving: Break up and transport paving to asphalt-recycling facility.

C. Concrete: Remove reinforcement and other metals from concrete and sort with other metals.

1. Pulverize concrete to maximum 1-1/2-inch size.

D. Masonry: Remove metal reinforcement, anchors, and ties from masonry and sort with other metals.

1. Pulverize masonry to maximum 3/4-inch size.
2. Clean and stack undamaged, whole masonry units on wood pallets.

E. Wood Materials: Sort and stack members according to size, type, and length. Separate lumber, engineered wood products, panel products, and treated wood materials.

F. Metals: Separate metals by type.

1. Structural Steel: Stack members according to size, type of member, and length.
2. Remove and dispose of bolts, nuts, washers, and other rough hardware.

G. Piping: Reduce piping to straight lengths and store by material and size. Separate supports, hangers, valves, sprinklers, and other components by material and size.

H. Conduit: Reduce conduit to straight lengths and store by material and size.

3.5 DISPOSAL OF WASTE

A. General: Except for items or materials to be salvaged or recycled, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.

1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

B. Burning: Do not burn waste materials.

END OF SECTION **017419**

SECTION 024116 - STRUCTURE DEMOLITION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Demolition and removal of buildings and site improvements.
2. Removing below-grade construction.
3. Disconnecting, capping or sealing, and removing site utilities.

1.2 DEFINITIONS

A. Remove: Detach items from existing construction and dispose of them off-site unless indicated to be salvaged.

1.3 MATERIALS OWNERSHIP

A. Unless otherwise indicated, demolition waste becomes property of Contractor.

B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner.

1. Carefully salvage in a manner to prevent damage and promptly return to Owner.

1.4 INFORMATIONAL SUBMITTALS

A. Proposed Protection Measures: Submit report, including Drawings, that indicates the measures proposed for protecting individuals and property. Indicate proposed locations and construction of barriers.

1. Adjacent Buildings: Detail special measures proposed to protect adjacent buildings to remain.

B. Schedule of Building Demolition Activities: Indicate the following:

1. Detailed sequence of demolition work, with starting and ending dates for each activity.
2. Temporary interruption of utility services.
3. Shutoff and removal of utility services.

1.5 CLOSEOUT SUBMITTALS

A. Inventory: Submit a list of items that have been removed and salvaged.

1.6 FIELD CONDITIONS

A. Buildings to be demolished have been vacated and their use discontinued.

1. Certain areas within the the building were inaccessible due to safety concerns, contractor should take specific note of the basement area noted on the plans. This area may include reminants of an old coal heater or similar.
2. runway beams between the two buildings are to be removed with extreme care and caution. no structural deficiency may be created within the building to remain.

B. Buildings immediately adjacent to demolition area will be occupied. Conduct building demolition so operations of occupied buildings will not be disrupted.

1. Provide not less than 72 hours notice of activities that will affect operations of adjacent occupied buildings.
2. Maintain access to existing walkways, exits, and other facilities used by occupants of adjacent buildings.

    a. Do not close or obstruct walkways, exits, or other facilities used by occupants of adjacent buildings without written permission from authorities having jurisdiction.

C. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.

D. Hazardous Materials: Present in buildings and structures to be demolished. A report on the presence of hazardous materials is on file for review and use. This report is also apended to the bid specification. Examine report to become aware of locations where hazardous materials are present and demolition requirements.

E. On-site storage or sale of removed items or materials is not permitted.

1.7 COORDINATION

A. Arrange demolition schedule so as not to interfere with operations of adjacent occupied buildings.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

B. Standards: Comply with ANSI/ASSP A10.6 and NFPA 241.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that utilities to building to be demolished have been disconnected and capped before starting demolition operations. Maintain/protect utilities to building to remain.

1. Location of existing service laterals to both buildings is unknown and may travel beneath the building. Contractor is responsible for location of all utilities and protection of utilities to remain throughout construction.

B. Review Project Record Documents of existing construction or other existing condition and hazardous material information provided by Owner. Owner does not guarantee that existing conditions are same as those indicated in Project Record Documents.

C. Perform an engineering survey of condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during building demolition operations.

D. Steel Tendons: Locate tensioned steel tendons and include recommendations for de-tensioning.

3.2 PREPARATION

A. Refrigerant: Before starting demolition, remove refrigerant from mechanical equipment according to 40 CFR 82 and regulations of authorities having jurisdiction.

3.3 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

A. Existing Utilities to Be Disconnected: Locate, identify, disconnect, and seal or cap off utilities serving buildings and structures to be demolished.

1. Arrange to shut off utilities with utility companies.
2. All utilities scheduled for demolition shall be removed to the servicing main.
3. Do not start demolition work until utility disconnecting and sealing have been completed and verified in writing.

3.4 PROTECTION

A. Existing Utilities to Remain: Maintain utility services to remain and protect from damage during demolition operations.

1. Do not interrupt existing utilities serving adjacent occupied or operating facilities unless authorized in writing by Owner and authorities having jurisdiction.

3.5 DEMOLITION, GENERAL

A. General: Demolish indicated buildings and site improvements completely. Use methods required to complete the Work within limitations of governing regulations and as follows:

1. Maintain adequate ventilation when using cutting torches.
2. Locate building demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.

B. Site Access and Temporary Controls: Conduct building demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

1. Do not close or obstruct streets, walks, walkways, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction. Provide alternate routes around closed or obstructed trafficways if required by authorities having jurisdiction.
2. Use water mist and other suitable methods to limit spread of dust and dirt. Comply with governing environmental-protection regulations. Do not use water when it may damage adjacent construction or create hazardous or objectionable conditions, such as ice, flooding, and pollution.

C. Explosives: Use of explosives is not permitted.

3.6 DEMOLITION BY MECHANICAL MEANS

A. Proceed with demolition of structural framing members systematically, from higher to lower level. Complete building demolition operations above each floor or tier before disturbing supporting members on the next lower level.

B. Remove debris from elevated portions of the building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.

1. Remove structural framing members and lower to ground by method suitable to minimize ground impact and dust generation.

C. Below-Grade Construction: Demolish foundation walls and other below-grade construction.

1. Remove below-grade construction, including basements, foundation walls, and footings, completely.

D. Existing Utilities: Demolish and remove existing utilities and below-grade utility structures.

3.7 SITE RESTORATION

A. Below-Grade Areas: Rough grade below-grade areas ready for further excavation or new construction.

B. Site Grading: Uniformly rough grade area of demolished construction to a smooth surface, free from irregular surface changes. Provide a smooth transition between adjacent existing grades and new grades.

3.8 REPAIRS

A. Promptly repair damage to adjacent buildings caused by demolition operations.

3.9 DISPOSAL OF DEMOLISHED MATERIALS

A. Remove demolition waste materials from Project site and dispose of them in an EPA-approved construction and demolition waste landfill acceptable to authorities having jurisdiction.

1. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

B. Do not burn demolished materials.

3.10 CLEANING

A. Clean adjacent structures and improvements of dust, dirt, and debris caused by building demolition operations. Return adjacent areas to condition existing before building demolition operations began.

1. Clean roadways of debris caused by debris transport.

END OF SECTION **024116**

SECTION 024119 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Demolition and removal of selected portions of building or structure.
2. Demolition and removal of selected site elements.

1.2 DEFINITIONS

A. Remove: Detach items from existing construction and dispose of them off-site unless indicated to be salvaged or reinstalled.

1.3 MATERIALS OWNERSHIP

A. Unless otherwise indicated, demolition waste becomes property of Contractor.

B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner.

1. Carefully salvage in a manner to prevent damage and promptly return to Owner.

1.4 FIELD CONDITIONS

A. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.

B. Notify Engineer of discrepancies between existing conditions and Drawings before proceeding with selective demolition.

C. Hazardous Materials: Present in buildings and structures to be selectively demolished. A report on the presence of hazardous materials is on file for review and use. Examine report to become aware of locations where hazardous materials are present. This report has also been apended to the bid document.

1. Owner will provide material safety data sheets for suspected hazardous materials that are known to be present in buildings and structures to be selectively demolished because of building operations or processes performed there.

E. Storage or sale of removed items or materials on-site is not permitted.

F. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.

1. Maintain fire-protection facilities in service during selective demolition operations.

1.5 COORDINATION

A. Arrange selective demolition schedule so as not to interfere with Owner's operations.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

B. Standards: Comply with ANSI/ASSP A10.6 and NFPA 241.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that utilities to building to be demolished have been disconnected and removed to the main before starting selective demolition operations.

B. Review Project Record Documents of existing construction or other existing condition and hazardous material information provided by Owner. Owner does not guarantee that existing conditions are same as those indicated in Project Record Documents.

C. A complete survey of existing conditions has not been prepared for this site. Contractor shall confirm all conditions prior to beginning demolition.

D. Survey of Existing Conditions: Record existing conditions by use of measured drawings.

3.2 PREPARATION

A. Refrigerant: Before starting demolition, remove refrigerant from mechanical equipment according to 40 CFR 82 and regulations of authorities having jurisdiction.

3.3 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

A. Existing Services/Systems to Remain: Identify and maintain services/systems indicated to remain and protect them against damage.

B. Existing Services/Systems to Be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and remove utility services and mechanical/electrical systems serving areas to be selectively demolished.

1. Arrange to shut off utilities with utility companies.

3.4 PROTECTION

A. Temporary Protection: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.

1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.

B. Remove temporary barricades and protections where hazards no longer exist.

3.5 CLEANING

A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION **024119**

SECTION 033000 - CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Cast-in-place concrete, including concrete materials, mixture design, placement procedures, and finishes.

1.2 DEFINITIONS

A. Cementitious Materials: Portland cement alone or in combination with one or more of the following: blended hydraulic cement, fly ash, slag cement, other pozzolans, and silica fume; materials subject to compliance with requirements.

B. Water/Cement Ratio (w/cm): The ratio by weight of water to cementitious materials.

1.3 DELIVERY, STORAGE, AND HANDLING

A. Comply with ASTM C94/C94M and ACI 301.

1.4 FIELD CONDITIONS

A. Cold-Weather Placement: Comply with ACI 301 and ACI 306.1 and as follows.

1. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
2. When average high and low temperature is expected to fall below 40 deg F for three successive days, maintain delivered concrete mixture temperature within the temperature range required by ACI 301.
3. Do not use frozen materials or materials containing ice or snow.
4. Do not place concrete in contact with surfaces less than 35 deg F, other than reinforcing steel.
5. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mixture designs.

B. Hot-Weather Placement: Comply with ACI 301 and ACI 305.1, and as follows:

1. Maintain concrete temperature at time of discharge to not exceed 95 deg F.

2. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade uniformly moist without standing water, soft spots, or dry areas.

PART 2 - PRODUCTS

2.1 CONCRETE, GENERAL

A. ACI Publications: Comply with ACI 301 unless modified by requirements in the Contract Documents.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verification of Conditions:

1. Before placing concrete, verify that installation of concrete forms, accessories, and reinforcement, and embedded items is complete and that required inspections have been performed.
2. Do not proceed until unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Provide reasonable auxiliary services to accommodate field testing and inspections, acceptable to testing agency, including the following:

1. Daily access to the Work.
2. Incidental labor and facilities necessary to facilitate tests and inspections.
3. Secure space for storage, initial curing, and field curing of test samples, including source of water and continuous electrical power at Project site during site curing period for test samples.
4. Security and protection for test samples and for testing and inspection equipment at Project site.

3.3 INSTALLATION OF 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.

1. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
2. Install anchor rods, accurately located, to elevations required and complying with tolerances in Section 7.5 of ANSI/AISC 303.

3. Install reglets to receive waterproofing and to receive through-wall flashings in outer face of concrete frame at exterior walls, where flashing is shown at lintels, shelf angles, and other conditions.

3.4 JOINTS

A. Construct joints true to line, with faces perpendicular to surface plane of concrete.

B. Construction Joints: Coordinate with floor slab pattern and concrete placement sequence.

1. Install so strength and appearance of concrete are not impaired, at locations indicated on Drawings or as approved by Architect.
2. Place joints perpendicular to main reinforcement.

    a. Continue reinforcement across construction joints unless otherwise indicated.
    b. Do not continue reinforcement through sides of strip placements of floors and slabs.

3. Form keyed joints as indicated. Embed keys at least 1-1/2 inches into concrete.
4. Locate joints for beams, slabs, joists, and girders at third points of spans. Offset joints in girders a minimum distance of twice the beam width from a beam-girder intersection.
5. Locate horizontal joints in walls and columns at underside of floors, slabs, beams, and girders and at the top of footings or floor slabs.
6. Space vertical joints in walls [**as indicated on Drawings**] <**Insert spacing**>. Unless otherwise indicated on Drawings, locate vertical joints beside piers integral with walls, near corners, and in concealed locations where possible.

C. Control Joints in Slabs-on-Ground: Form weakened-plane control joints, sectioning concrete into areas as indicated. Construct control joints for a depth equal to at least [**one-fourth**] <**Insert depth**> of concrete thickness as follows:

1. Grooved Joints: Form control joints after initial floating by grooving and finishing each edge of joint to a radius of 1/8 inch. Repeat grooving of control joints after applying surface finishes. Eliminate groover tool marks on concrete surfaces.
2. Sawed Joints: Form control joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch- wide joints into concrete when cutting action does not tear, abrade, or otherwise damage surface and before concrete develops random cracks.

D. Isolation Joints in Slabs-on-Ground: After removing formwork, install joint-filler strips at slab junctions with vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated.

1. Extend joint-filler strips full width and depth of joint, terminating flush with finished concrete surface unless otherwise indicated on Drawings.
2. Terminate full-width joint-filler strips not less than 1/2 inch or more than 1 inch below finished concrete surface, where joint sealants, specified in Section 079200 "Joint Sealants," are indicated.
3. Install joint-filler strips in lengths as long as practicable. Where more than one length is required, lace or clip sections together.

E. Doweled Joints:

1. Install dowel bars and support assemblies at joints where indicated on Drawings.
2. Lubricate or asphalt coat one-half of dowel bar length to prevent concrete bonding to one side of joint.

F. Dowel Plates: Install dowel plates at joints where indicated on Drawings.

3.5 CONCRETE PLACEMENT

A. Before placing concrete, verify that installation of formwork, reinforcement, embedded items, and vapor retarder is complete and that required inspections are completed.

1. Immediately prior to concrete placement, inspect vapor retarder for damage and deficient installation, and repair defective areas.
2. Provide continuous inspection of vapor retarder during concrete placement and make necessary repairs to damaged areas as Work progresses.

B. Notify Architect and testing and inspection agencies 24 hours prior to commencement of concrete placement.

C. Do not add water to concrete during delivery, at Project site, or during placement unless approved by Architect in writing, but not to exceed the amount indicated on the concrete delivery ticket.

1. Do not add water to concrete after adding high-range water-reducing admixtures to mixture.

D. Before test sampling and placing concrete, water may be added at Project site, subject to limitations of ACI 301, but not to exceed the amount indicated on the concrete delivery ticket.

1. Do not add water to concrete after adding high-range water-reducing admixtures to mixture.

E. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete is placed on concrete that has hardened enough to cause seams or planes of weakness.

1. If a section cannot be placed continuously, provide construction joints as indicated.
2. Deposit concrete to avoid segregation.
3. Deposit concrete in horizontal layers of depth not to exceed formwork design pressures and in a manner to avoid inclined construction joints.
4. Consolidate placed concrete with mechanical vibrating equipment in accordance with ACI 301.

    a. Do not use vibrators to transport concrete inside forms.
    b. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least 6 inches into preceding layer.
    c. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity.
    d. At each insertion, limit duration of vibration to time necessary to consolidate concrete, and complete embedment of reinforcement and other embedded items without causing mixture constituents to segregate.

F. Deposit and consolidate concrete for floors and slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.

1. Do not place concrete floors and slabs in a checkerboard sequence.
2. Consolidate concrete during placement operations, so concrete is thoroughly worked around reinforcement and other embedded items and into corners.
3. Maintain reinforcement in position on chairs during concrete placement.
4. Screed slab surfaces with a straightedge and strike off to correct elevations.
5. Level concrete, cut high areas, and fill low areas.
6. Slope surfaces uniformly to drains where required.
7. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, before excess bleedwater appears on the surface.
8. Do not further disturb slab surfaces before starting finishing operations.

3.6 FINISHING FORMED SURFACES

A. As-Cast Surface Finishes:

1. ACI 301 Surface Finish SF-1.0: As-cast concrete texture imparted by form-facing material.

a. Patch voids larger than 1-1/2 inches wide or 1/2 inch deep.
b. Remove projections larger than 1 inch.
c. Tie holes do not require patching.
d. Surface Tolerance: ACI 117 Class D.
e. Apply to concrete surfaces [**not exposed to public view**] <**Insert locations**>.

2. ACI 301 Surface Finish SF-2.0: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams.

a. Patch voids larger than 3/4 inch wide or 1/2 inch deep.
b. Remove projections larger than 1/4 inch.
c. Patch tie holes.
d. Surface Tolerance: ACI 117 Class B.
e. Locations: Apply to concrete surfaces [**exposed to public view,**] [**to receive a rubbed finish,**] [**or to be covered with a coating or covering material applied directly to concrete**] <**Insert locations**>.

3. ACI 301 Surface Finish SF-3.0:

a. Patch voids larger than 3/4 inch wide or 1/2 inch deep.
b. Remove projections larger than 1/8 inch.
c. Patch tie holes.
d. Surface Tolerance: ACI 117 Class A.
e. Locations: Apply to concrete surfaces [**exposed to public view,**] [**to receive a rubbed finish,**] [**or to be covered with a coating or covering material applied directly to concrete**] <**Insert locations**>.

B. Rubbed Finish: Apply the following to as cast surface finishes where indicated on Drawings:

1. Smooth-Rubbed Finish:

a. Perform no later than one day after form removal.
b. Moisten concrete surfaces and rub with carborundum brick or another abrasive until producing a uniform color and texture.
c. If sufficient cement paste cannot be drawn from the concrete by the rubbing process, use a grout made from the same cementitious materials used in the in-place concrete.
d. Maintain required patterns or variances as shown on Drawings or to match [**design reference sample**] [**field sample panels**] [**mockups**].

2. Grout-Cleaned Rubbed Finish:

a. Clean concrete surfaces after contiguous surfaces are completed and accessible.
b. Do not clean concrete surfaces as Work progresses.
c. Mix 1 part portland cement to 1-1/2 parts fine sand, complying with ASTM C144 or ASTM C404, by volume, with sufficient water to produce a mixture with the consistency of thick paint. Add white portland cement in amounts determined by trial patches, so color of dry grout matches adjacent surfaces.
d. Wet concrete surfaces.
e. 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.
f. Maintain required patterns or variances as shown on Drawings or to match [**design reference sample**] [**field sample panels**] [**mockups**].

3. Cork-Floated Finish:

a. Mix 1 part portland cement to 1 part fine sand, complying with ASTM C144 or ASTM C404, by volume, with sufficient water to produce a mixture with the consistency of thick paint.
b. Mix 1 part portland cement and 1 part fine sand with sufficient water to produce a mixture of stiff grout. Add white portland cement in amounts determined by trial patches, so color of dry grout matches adjacent surfaces.
c. Wet concrete surfaces.
d. Compress grout into voids by grinding surface.
e. In a swirling motion, finish surface with a cork float.
f. Maintain required patterns or variances as shown on Drawings or to match [**design reference sample**] [**field sample panels**] [**mockups**].

4. Scrubbed Finish: After concrete has achieved a compressive strength of from 1000 to 1500 psi, apply scrubbed finish.

a. Wet concrete surfaces thoroughly and scrub with stiff fiber or wire brushes, using water freely, until top mortar surface is removed and aggregate is uniformly exposed.
b. Rinse scrubbed surfaces with clean water.
c. Maintain continuity of finish on each surface or area of Work.
d. Remove only enough concrete mortar from surfaces to match [**design reference sample**] [**field sample panels**] [**mockups**].

C. Abrasive-Blast Finish: Apply the following to as-cast surface finishes where indicated on Drawings:

1. Perform abrasive blasting after compressive strength of concrete exceeds 2000 psi.

2. Coordinate with formwork removal to ensure that surfaces to be abrasive blasted are treated at the same age.
3. Surface Continuity:

    a. Perform abrasive-blast finishing as continuous operation, maintaining continuity of finish on each surface or area of Work.
    b. Maintain required patterns or variances in depths of blast to match [**design reference sample**] [**field sample panels**] [**mockups**].

4. Abrasive Blasting:

    a. Abrasive-blast corners and edges of patterns carefully, using backup boards to maintain uniform corner and edge lines.
    b. Determine type of nozzle pressure and blasting techniques required to match field sample.
    c. Depth of Cut: Use an abrasive grit of proper type and gradation to expose aggregate and surrounding matrix surfaces to match field sample, as follows:

        1) Brush Texture: Remove cement matrix to dull surface sheen and expose face of fine aggregate, with no significant reveal.
        2) Light Texture: Expose fine aggregate with occasional exposure of coarse aggregate and uniform color, with maximum reveal of 1/16 inch.
        3) Medium Texture: Generally, expose coarse aggregate with slight reveal and with a maximum reveal of 1/4 inch.
        4) Heavy Texture: Expose and reveal coarse aggregate to a maximum projection of one-third its diameter, with reveal range of 1/4 to 1/2 inch.

    d. Maintain required patterns or variances in reveal projection to match [**design reference sample**] [**field sample panels**] [**mockups**].

D. High-Pressure Water-Jet Finish: Apply the following to as-cast surface finishes where indicated on Drawings:

1. Perform high-pressure water jetting on concrete that has achieved a minimum compressive strength of 4500 psi.
2. Coordinate with formwork removal to ensure that surfaces to be high-pressure water-jet finished are treated at same age for uniform results.
3. Surface Continuity: Perform high-pressure water-jet finishing in as continuous an operation as possible, maintaining continuity of finish on each surface or area of Work.
4. Maintain required patterns or variances in reveal projection to match [**design reference sample**] [**field sample panels**] [**mockups**].

E. Bushhammer Finish: Apply the following to as-cast surface finishes where indicated on Drawings:

1. Perform bushhammer finish to concrete that has achieved a minimum compressive strength of 4500 psi.
2. Surface Continuity:

    a. Perform bushhammer finishing in as continuous an operation as possible, maintaining continuity of finish on each surface or area of Work.

3. Surface Cut:

    a. Maintain required depth of cut and general aggregate exposure.
    b. Use power tool with hammer attachments for large, flat surfaces, and use hand hammers for small areas, at corners and edges, and for restricted locations where power tools cannot reach.

4. Remove impressions of formwork and form facings with exception of tie holes.
5. Maintain required patterns or variances of cut as shown on Drawings or to match [**design reference sample**] [**field sample panels**] [**mockups**].
6. Maintain control of concrete chips, dust, and debris in each Work area, limiting migration of airborne materials and dust by use of tarpaulins, wind-breaks, or similar devices.

F. Related Unformed Surfaces:

1. At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a color and texture matching adjacent formed surfaces.
2. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces unless otherwise indicated.

3.7 FINISHING FLOORS AND SLABS

A. Comply with ACI 302.1R recommendations for screeding, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.

B. Scratch Finish:

1. While still plastic, texture concrete surface that has been screeded and bull-floated or darbied.
2. Use stiff brushes, brooms, or rakes to produce a profile depth of 1/4 inch in one direction.
3. Apply scratch finish to surfaces [**to receive concrete floor toppings**] [**to receive mortar setting beds for bonded cementitious floor finishes**] >**Insert locations**>.

C. Float Finish:

1. When bleedwater sheen has disappeared and concrete surface has stiffened sufficiently to permit operation of specific float apparatus, consolidate concrete surface with power-driven floats or by hand floating if area is small or inaccessible to power-driven floats.
2. Repeat float passes and restraightening until surface is left with a uniform, smooth, granular texture and complies with ACI 117 tolerances for conventional concrete.
3. 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**] <**Insert locations**>.

D. Trowel Finish:

1. After applying float finish, apply first troweling and consolidate concrete by hand or power-driven trowel.
2. Continue troweling passes and restraighten until surface is free of trowel marks and uniform in texture and appearance.
3. Grind smooth any surface defects that would telegraph through applied coatings or floor coverings.
4. Do not add water to concrete surface.
5. Do not apply hard-troweled finish to concrete, which has a total air content greater than 3 percent.
6. Apply a trowel finish to surfaces [**exposed to view**] [**or**] [**to be covered with resilient flooring, carpet, ceramic or quarry tile set over a cleavage membrane, paint, or another thin-film-finish coating system**] <**Insert locations**>.
7. Finish surfaces to the following tolerances, in accordance with ASTM E1155, for a randomly trafficked floor surface:

    a. Slabs on Ground:

        1) 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 [1/4 inch] [3/16 inch] [1/8 inch] [1/8 inch **and also no more than** 1/16 inch **in** 2 feet].
        2) Specified overall values of flatness, F_F 25; and of levelness, F_L 20; with minimum local values of flatness, F_F 17; and of levelness, F_L 15.
        3) Specified overall values of flatness, F_F 35; and of levelness, F_L 25; with minimum local values of flatness, F_F 24; and of levelness, F_L 17.
        4) Specified overall values of flatness, F_F 45; and of levelness, F_L 35; with minimum local values of flatness, F_F 30; and of levelness, F_L 24.
        5) Specified overall values of flatness, F_F 50; and of levelness, F_L 25; with minimum local values of flatness, F_F 40; and of levelness, F_L 17.

b. Suspended Slabs:

1) 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 [1/4 inch] [3/16 inch] [1/8 inch] [1/8 inch **and also no more than** 1/16 inch **in** 2 feet].
2) Specified overall values of flatness, F_F 25; and of levelness, F_L 20; with minimum local values of flatness, F_F 17; and of levelness, F_L 15.
3) Specified overall values of flatness, F_F 35; and of levelness, F_L 20; with minimum local values of flatness, F_F 24; and of levelness, F_L 15.
4) Specified overall values of flatness, F_F 45; and of levelness, F_L 35; with minimum local values of flatness, F_F 30; and of levelness, F_L 24.

E. Trowel and Fine-Broom Finish: Apply a first trowel finish to surfaces [**indicated on Drawings**] [**where ceramic or quarry tile is to be installed by either thickset or thinset method**]. While concrete is still plastic, slightly scarify surface with a fine broom perpendicular to main traffic route.

1. Coordinate required final finish with Architect before application.
2. 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 locations indicated on Drawings.

1. Immediately after float finishing, slightly roughen trafficked surface by brooming with fiber-bristle broom perpendicular to main traffic route.
2. Coordinate required final finish with Architect before application.

3.8 INSTALLATION OF MISCELLANEOUS CONCRETE ITEMS

A. Filling In:

1. Fill in holes and openings left in concrete structures after Work of other trades is in place unless otherwise indicated.
2. Mix, place, and cure concrete, as specified, to blend with in-place construction.
3. Provide other miscellaneous concrete filling indicated or required to complete the Work.

B. Curbs: Provide monolithic finish to interior curbs by stripping forms while concrete is still green and by steel-troweling surfaces to a hard, dense finish with corners, intersections, and terminations slightly rounded.

C. Equipment Bases and Foundations:

1. Coordinate sizes and locations of concrete bases with actual equipment provided.
2. Construct concrete bases [4 inches] [6 inches] [8 inches] <**Insert dimension**> high unless otherwise indicated on Drawings, and extend base not less than 6 inches in each direction beyond the maximum dimensions of supported equipment unless otherwise indicated on Drawings, or unless required for seismic anchor support.
3. Install dowel rods to connect concrete base to concrete floor. Unless otherwise indicated, install dowel rods on 18-inch centers around the full perimeter of concrete base.
4. For supported equipment, install epoxy-coated anchor bolts that extend through concrete base and anchor into structural concrete substrate.
5. Prior to pouring concrete, place and secure anchorage devices.

    a. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
    b. Cast anchor-bolt insert into bases.
    c. Install anchor bolts to elevations required for proper attachment to supported equipment.

D. Steel Pan Stairs: Provide concrete fill for steel pan stair treads, landings, and associated items.

1. Cast-in inserts and accessories, as shown on Drawings.
2. Screed, tamp, and trowel finish concrete surfaces.

3.9 TOLERANCES

A. Conform to ACI 117.

3.10 JOINT FILLING

A. Prepare, clean, and install joint filler in accordance with manufacturer's written instructions.

1. Defer joint filling until concrete has aged at least [**one**] [**six**] month(s).
2. Do not fill joints until construction traffic has permanently ceased.

B. Remove dirt, debris, saw cuttings, curing compounds, and sealers from joints; leave contact faces of joints clean and dry.

C. Install semirigid joint filler full depth in saw-cut joints and at least 2 inches deep in formed joints.

D. Overfill joint, and trim joint filler flush with top of joint after hardening.

3.11 PROTECTION

A. Protect concrete surfaces as follows:

1. Protect from petroleum stains.
2. Diaper hydraulic equipment used over concrete surfaces.
3. Prohibit vehicles from interior concrete slabs.
4. Prohibit use of pipe-cutting machinery over concrete surfaces.
5. Prohibit placement of steel items on concrete surfaces.
6. Prohibit use of acids or acidic detergents over concrete surfaces.
7. Protect liquid floor treatment from damage and wear during the remainder of construction period. Use protective methods and materials, including temporary covering, recommended in writing by liquid floor treatments installer.
8. Protect concrete surfaces scheduled to receive surface hardener or polished concrete finish using Floor Slab Protective Covering.

END OF SECTION **033000**

SECTION 033053 – MISCELLANEOUS CAST-IN-PLACE CONCRETE

PART 1 - GENERAL (Not Applicable)

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION **033053**

SECTION 311000 - SITE CLEARING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Stripping and stockpiling topsoil.
2. Stripping and stockpiling rock.
3. Removing above- and below-grade site improvements.
4. Disconnecting, capping or sealing, and removing site utilities.
5. Temporary erosion and sedimentation control.

1.2 DEFINITIONS

A. Subsoil: Soil beneath the level of subgrade; soil beneath the topsoil layers of a naturally occurring soil profile, typified by less than 1 percent organic matter and few soil organisms.

B. Surface Soil: Soil that is present at the top layer of the existing soil profile. In undisturbed areas, surface soil is typically called "topsoil," but in disturbed areas such as urban environments, the surface soil can be subsoil.

C. Topsoil: Top layer of the soil profile consisting of existing native surface topsoil or existing in-place surface soil; the zone where plant roots grow.

D. Plant-Protection Zone: Area surrounding individual trees, groups of trees, shrubs, or other vegetation to be protected during construction and indicated on Drawings.

E. Vegetation: Trees, shrubs, groundcovers, grass, and other plants.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.4 MATERIAL OWNERSHIP

A. Except for materials indicated to be stockpiled or otherwise remain Owner's property, cleared materials shall become Contractor's property and shall be removed from Project site.

1.5 INFORMATIONAL SUBMITTALS

A. Existing Conditions: Documentation of existing trees and plantings, adjoining construction, and site improvements that establishes preconstruction conditions that might be misconstrued as damage caused by site clearing.

1. Use sufficiently detailed photographs or video recordings.
2. Include plans and notations to indicate specific wounds and damage conditions of each tree or other plant designated to remain.

B. Topsoil stripping and stockpiling program.

C. Record Drawings: Identifying and accurately showing locations of capped utilities and other subsurface structural, electrical, and mechanical conditions.

1.6 QUALITY ASSURANCE

A. Topsoil Stripping and Stockpiling Program: Prepare a written program to systematically demonstrate the ability of personnel to properly follow procedures and handle materials and equipment during the Work. Include dimensioned diagrams for placement and protection of stockpiles.

1.7 FIELD CONDITIONS

A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during site-clearing operations.

1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
2. Provide alternate routes around closed or obstructed trafficways if required by Owner or authorities having jurisdiction.

B. Utility Locator Service: Notify utility locator service for area where Project is located before site clearing.

C. Do not commence site clearing operations until temporary erosion- and sedimentation-control measures are in place.

D. Soil Stripping, Handling, and Stockpiling: Perform only when the soil is dry or slightly moist.

PART 2 - EXECUTION

2.1 PREPARATION

A. Protect and maintain benchmarks and survey control points from disturbance during construction.

B. Protect existing site improvements to remain from damage during construction.

1. Restore damaged improvements to their original condition, as acceptable to Owner.

2.2 TEMPORARY EROSION AND SEDIMENTATION CONTROL

A. Provide temporary erosion- and sedimentation-control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to erosion- and sedimentation-control Drawings and requirements of authorities having jurisdiction.

B. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross protection zones.

C. Inspect, maintain, and repair erosion- and sedimentation-control measures during construction until permanent vegetation has been established.

D. Remove erosion and sedimentation controls, and restore and stabilize areas disturbed during removal.

2.3 EXISTING UTILITIES

A. Locate, identify, disconnect, and remove to servicing main utilities indicated to be removed.

1. Arrange with utility companies to shut off indicated utilities.

B. Interrupting Existing Utilities: 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. Do not proceed with utility interruptions without Engineer's written permission.

C. Excavate for and remove underground utilities indicated to be removed.

2.4 TOPSOIL STRIPPING

A. Remove sod and grass before stripping topsoil if and where present.

B. Strip topsoil to depth of 6 inches in a manner to prevent intermingling with underlying subsoil or other waste materials.

1. Remove subsoil and nonsoil materials from topsoil, including clay lumps, gravel, and other objects larger than 2 inches in diameter; trash, debris, weeds, roots, and other waste materials.

C. Stockpile topsoil away from edge of excavations without intermixing with subsoil or other materials. Grade and shape stockpiles to drain surface water. Cover to prevent windblown dust and erosion by water.

1. Limit height of topsoil stockpiles to 72 inches.
2. Do not stockpile topsoil within protection zones.
3. Dispose of surplus topsoil. Surplus topsoil is that which exceeds quantity indicated to be stockpiled or reused.
4. Stockpile surplus topsoil to allow for respreading deeper topsoil.

2.5 SITE IMPROVEMENTS

A. Remove existing above- and below-grade improvements as indicated and necessary to facilitate new construction.

B. Remove slabs, paving, curbs, gutters, and aggregate base as indicated.

1. Unless existing full-depth joints coincide with line of demolition, neatly saw-cut along line of existing pavement to remain before removing adjacent existing pavement. Saw-cut faces vertically.
2. Paint cut ends of steel reinforcement in concrete to remain with two coats of antirust coating, following coating manufacturer's written instructions. Keep paint off surfaces that will remain exposed.

2.6 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Remove surplus soil material, unsuitable topsoil, obstructions, demolished materials, and waste materials including trash and debris, and legally dispose of them off Owner's property.

B. Separate recyclable materials produced during site clearing from other nonrecyclable materials. Store or stockpile without intermixing with other materials, and transport them to recycling facilities. Do not interfere with other Project work.

END OF SECTION **311000**

SECTION 312000 - EARTH MOVING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Excavating and filling for rough grading the Site.
2. Excavating and backfilling for buildings and structures.
3. Excavating and backfilling trenches for utilities and pits for buried utility structures.

1.3 DEFINITIONS

A. Backfill: Soil material or controlled low-strength material used to fill an excavation.

1. Initial Backfill: Backfill placed beside and over pipe in a trench, including haunches to support sides of pipe.
2. Final Backfill: Backfill placed over initial backfill to fill a trench.

B. Base Course: Aggregate layer placed between the subbase course and hot-mix asphalt paving.

C. Bedding Course: Aggregate layer placed over the excavated subgrade in a trench before laying pipe.

D. Borrow Soil: Satisfactory soil imported from off-site for use as fill or backfill.

E. Drainage Course: Aggregate layer supporting the slab-on-grade that also minimizes upward capillary flow of pore water.

F. Excavation: Removal of material encountered above subgrade elevations and to lines and dimensions indicated.

1. Authorized Additional Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions as directed by Architect. Authorized additional excavation and replacement material will be paid for according to Contract provisions for changes in the Work.

2. Bulk Excavation: Excavation more than 10 feet in width and more than 30 feet in length.
3. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions without direction by Architect. Unauthorized excavation, as well as remedial work directed by Architect, shall be without additional compensation.

G. Fill: Soil materials used to raise existing grades.

H. Rock: Rock material in beds, ledges, unstratified masses, conglomerate deposits, and boulders of rock material that exceed 1 cu. yd. for bulk excavation or 3/4 cu. yd. for footing, trench, and pit excavation that cannot be removed by rock-excavating equipment equivalent to the following in size and performance ratings, without systematic drilling, ram hammering, ripping, or blasting, when permitted:

1. Equipment for Footing, Trench, and Pit Excavation: Late-model, track-mounted hydraulic excavator; equipped with a 42-inch-maximum-width, short-tip-radius rock bucket; rated at not less than 138-hp flywheel power with bucket-curling force of not less than 28,700 lbf and stick-crowd force of not less than 18,400 lbf with extra-long reach boom.
2. Equipment for Bulk Excavation: Late-model, track-mounted loader; rated at not less than 230-hp flywheel power and developing a minimum of 47,992-lbf breakout force with a general-purpose bare bucket.

I. Rock: Rock material in beds, ledges, unstratified masses, conglomerate deposits, and boulders of rock material 3/4 cu. yd. or more in volume that exceed a standard penetration resistance of 100 blows/2 inches when tested by a geotechnical testing agency, according to ASTM D1586.

J. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.

K. Subbase Course: Aggregate layer placed between the subgrade and base course for hot-mix asphalt pavement, or aggregate layer placed between the subgrade and a cement concrete pavement or a cement concrete or hot-mix asphalt walk.

L. Subgrade: Uppermost surface of an excavation or the top surface of a fill or backfill immediately below subbase, drainage fill, drainage course, or topsoil materials.

M. Utilities: On-site underground pipes, conduits, ducts, and cables as well as underground services within buildings.

1.4 FIELD CONDITIONS

A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during earth-moving operations.

1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
2. Provide alternate routes around closed or obstructed traffic ways if required by Owner or authorities having jurisdiction.

B. Improvements on Adjoining Property: Authority for performing earth moving indicated on property adjoining Owner's property will be obtained by Owner before award of Contract.

1. Do not proceed with work on adjoining property until directed by Architect.

C. Utility Locator Service: Notify utility locator service for area where Project is located before beginning earth-moving operations.

D. Do not commence earth-moving operations until temporary site fencing and erosion- and sedimentation-control measures specified in Section 311000 "Site Clearing"are in place.

E. Do not commence earth-moving operations until plant-protection measures specified in Section 015639 "Temporary Tree and Plant Protection" are in place.

F. The following practices are prohibited within protection zones:

1. Storage of construction materials, debris, or excavated material.
2. Parking vehicles or equipment.
3. Foot traffic.
4. Erection of sheds or structures.
5. Impoundment of water.
6. Excavation or other digging unless otherwise indicated.
7. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.

G. Do not direct vehicle or equipment exhaust towards protection zones.

H. Prohibit heat sources, flames, ignition sources, and smoking within or near protection zones.

PART 2 - PRODUCTS

PART 3 - EXECUTION

3.1 PREPARATION

A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth-moving operations.

B. Protect and maintain erosion and sedimentation controls during earth-moving operations.

C. Protect subgrades and foundation soils from freezing temperatures and frost. Remove temporary protection before placing subsequent materials.

3.2 DEWATERING

A. Provide dewatering system of sufficient scope, size, and capacity to control hydrostatic pressures and to lower, control, remove, and dispose of ground water and permit excavation and construction to proceed on dry, stable subgrades.

B. Prevent surface water and ground water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area.

C. Protect subgrades from softening, undermining, washout, and damage by rain or water accumulation.

1. Reroute surface water runoff away from excavated areas. Do not allow water to accumulate in excavations. Do not use excavated trenches as temporary drainage ditches.

D. Dispose of water removed by dewatering in a manner that avoids endangering public health, property, and portions of work under construction or completed. Dispose of water and sediment in a manner that avoids inconvenience to others.

3.3 EXPLOSIVES

A. Explosives: Do not use explosives.

3.4 EXCAVATION, GENERAL

A. Unclassified Excavation: Excavate to subgrade elevations regardless of the character of surface and subsurface conditions encountered. Unclassified excavated materials may include rock, soil materials, and obstructions. No changes in the Contract Sum or the Contract Time will be authorized for rock excavation or removal of obstructions.

1. If excavated materials intended for fill and backfill include unsatisfactory soil materials and rock, replace with satisfactory soil materials.
2. Remove rock to lines and grades indicated to permit installation of permanent construction without exceeding the following dimensions:

    a. 24 inches outside of concrete forms other than at footings.
    b. 12 inches outside of concrete forms at footings.
    c. 6 inches outside of minimum required dimensions of concrete cast against grade.
    d. Outside dimensions of concrete walls indicated to be cast against rock without forms or exterior waterproofing treatments.
    e. 6 inches beneath bottom of concrete slabs-on-grade.
    f. 6 inches beneath pipe in trenches and the greater of [24 inches] >**Insert dimension**> wider than pipe or 42 inches wide.

B. Classified Excavation: Excavate to subgrade elevations. Material to be excavated will be classified as earth and rock. Do not excavate rock until it has been classified and cross sectioned by Architect. The Contract Sum will be adjusted for rock excavation according to unit prices included in the Contract Documents. Changes in the Contract Time may be authorized for rock excavation.

1. Earth excavation includes excavating pavements and obstructions visible on surface; underground structures, utilities, and other items indicated to be removed; and soil, boulders, and other materials not classified as rock or unauthorized excavation.

    a. Intermittent drilling; blasting, if permitted; ram hammering; or ripping of material not classified as rock excavation is earth excavation.

2. Rock excavation includes removal and disposal of rock. Remove rock to lines and subgrade elevations indicated to permit installation of permanent construction without exceeding the following dimensions:

    a. 24 inches outside of concrete forms other than at footings.
    b. 12 inches outside of concrete forms at footings.
    c. 6 inches outside of minimum required dimensions of concrete cast against grade.
    d. Outside dimensions of concrete walls indicated to be cast against rock without forms or exterior waterproofing treatments.

e. 6 inches beneath bottom of concrete slabs-on-grade.
f. 6 inches beneath pipe in trenches and the greater of 24 inches wider than pipe or 42 inches wide.

3.5 EXCAVATION FOR STRUCTURES

A. Excavate to indicated elevations and dimensions within a tolerance of plus or minus 1 inch. If applicable, extend excavations a sufficient distance from structures for placing and removing concrete formwork, for installing services and other construction, and for inspections.

1. Excavations for Footings and Foundations: Do not disturb bottom of excavation. Excavate by hand to final grade just before placing concrete reinforcement. Trim bottoms to required lines and grades to leave solid base to receive other work.
2. Pile Foundations: Stop excavations 6 to 12 inches above bottom of pile cap before piles are placed. After piles have been driven, remove loose and displaced material. Excavate to final grade, leaving solid base to receive concrete pile caps.
3. Excavation for Underground Tanks, Basins, and Mechanical or Electrical Utility Structures: Excavate to elevations and dimensions indicated within a tolerance of plus or minus 1 inch. Do not disturb bottom of excavations intended as bearing surfaces.

3.6 EXCAVATION FOR UTILITY TRENCHES

A. Excavate trenches to indicated gradients, lines, depths, and elevations.

1. Beyond building perimeter, excavate trenches to allow installation of top of pipe below frost line.

B. Excavate trenches to uniform widths to provide the following clearance on each side of pipe or conduit. Excavate trench walls vertically from trench bottom to 12 inches higher than top of pipe or conduit unless otherwise indicated.

1. Clearance: 12 inches each side of pipe or conduit.

C. Trench Bottoms: Excavate and shape trench bottoms to provide uniform bearing and support of pipes and conduit. Shape subgrade to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits. Remove projecting stones and sharp objects along trench subgrade.

1. For pipes and conduit less than 6 inches in nominal diameter, hand-excavate trench bottoms and support pipe and conduit on an undisturbed subgrade.

2. For pipes and conduit 6 inches or larger in nominal diameter, shape bottom of trench to support bottom 90 degrees of pipe or conduit circumference. Fill depressions with tamped sand backfill.
3. For flat-bottomed, multiple-duct conduit units, hand-excavate trench bottoms and support conduit on an undisturbed subgrade.
4. Excavate trenches 6 inches deeper than elevation required in rock or other unyielding bearing material to allow for bedding course.

D. Trench Bottoms: Excavate trenches 4 inches deeper than bottom of pipe and conduit elevations to allow for bedding course. Hand-excavate deeper for bells of pipe.

1. Excavate trenches 6 inches deeper than elevation required in rock or other unyielding bearing material to allow for bedding course.

E. Trenches in Tree- and Plant-Protection Zones:

1. Hand-excavate to indicated lines, cross sections, elevations, and subgrades. Use narrow-tine spading forks to comb soil and expose roots. Do not break, tear, or chop exposed roots. Do not use mechanical equipment that rips, tears, or pulls roots.
2. Do not cut main lateral roots or taproots; cut only smaller roots that interfere with installation of utilities.
3. Cut and protect roots according to requirements in Section 015639 "Temporary Tree and Plant Protection."

3.7 UNAUTHORIZED EXCAVATION

A. Fill unauthorized excavation under foundations or wall footings by extending bottom elevation of concrete foundation or footing to excavation bottom, without altering top elevation. Lean concrete fill, with 28-day compressive strength of 2500 psi, may be used when approved by Architect.

1. Fill unauthorized excavations under other construction, pipe, or conduit as directed by Architect.

3.8 STORAGE OF SOIL MATERIALS

A. Stockpile borrow soil materials and excavated satisfactory soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.

1. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees.

3.9 BACKFILL

A. Place and compact backfill in excavations promptly, but not before completing the following:

1. Construction below finish grade including, where applicable, subdrainage, dampproofing, waterproofing, and perimeter insulation.
2. Surveying locations of underground utilities for Record Documents.
3. Testing and inspecting underground utilities.
4. Removing concrete formwork.
5. Removing trash and debris.
6. Removing temporary shoring, bracing, and sheeting.
7. Installing permanent or temporary horizontal bracing on horizontally supported walls.

B. Place backfill on subgrades free of mud, frost, snow, or ice.

3.10 UTILITY TRENCH BACKFILL

A. Place backfill on subgrades free of mud, frost, snow, or ice.

B. Place and compact bedding course on trench bottoms and where indicated. Shape bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits.

C. Trenches under Footings: Backfill trenches excavated under footings and within 18 inches of bottom of footings with satisfactory soil; fill with concrete to elevation of bottom of footings. Concrete is specified in Section 033000 "Cast-in-Place Concrete."

D. Trenches under Roadways: Provide 4-inch- thick, concrete-base slab support for piping or conduit less than 30 inches below surface of roadways. After installing and testing, completely encase piping or conduit in a minimum of 4 inches of concrete before backfilling or placing roadway subbase course. Concrete is specified in Section 033000 "Cast-in-Place Concrete."

E. Backfill voids with satisfactory soil while removing shoring and bracing.

F. Initial Backfill:

1. Soil Backfill: Place and compact initial backfill of satisfactory soil, free of particles larger than 1 inch in any dimension, to a height of 12 inches over the pipe or conduit.

a. Carefully compact initial backfill under pipe haunches and compact evenly up on both sides and along the full length of piping or conduit to avoid damage or displacement of piping or conduit. Coordinate backfilling with utilities testing.

2. Controlled Low-Strength Material: Place initial backfill of controlled low-strength material to a height of 12 inches over the pipe or conduit. Coordinate backfilling with utilities testing.

G. Final Backfill:

1. Soil Backfill: Place and compact final backfill of satisfactory soil to final subgrade elevation.
2. Controlled Low-Strength Material: Place final backfill of controlled low-strength material to final subgrade elevation.

H. Warning Tape: Install warning tape directly above utilities, 12 inches below finished grade, except 6 inches below subgrade under pavements and slabs.

3.11 SOIL FILL

A. Plow, scarify, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing material.

B. Place and compact fill material in layers to required elevations as follows:

1. Under grass and planted areas, use satisfactory soil material.
2. Under walks and pavements, use satisfactory soil material.
3. Under steps and ramps, use engineered fill.
4. Under building slabs, use engineered fill.
5. Under footings and foundations, use engineered fill.

C. Place soil fill on subgrades free of mud, frost, snow, or ice.

3.12 SOIL MOISTURE CONTROL

A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill soil layer before compaction to within 2 percent of optimum moisture content.

1. Do not place backfill or fill soil material on surfaces that are muddy, frozen, or contain frost or ice.
2. Remove and replace, or scarify and air dry, otherwise satisfactory soil material that exceeds optimum moisture content by 2 percent and is too wet to compact to specified dry unit weight.

3.13 COMPACTION OF SOIL BACKFILLS AND FILLS

A. Place backfill and fill soil materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment and not more than 4 inches in loose depth for material compacted by hand-operated tampers.

B. Place backfill and fill soil materials evenly on all sides of structures to required elevations and uniformly along the full length of each structure.

C. Compact soil materials to not less than the following percentages of maximum dry unit weight according to ASTM D698:

1. Under structures, building slabs, steps, and pavements, scarify and recompact top 12 inches of existing subgrade and each layer of backfill or fill soil material at 95 percent.
2. Under walkways, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 92 percent.
3. Under turf or unpaved areas, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 85 percent.
4. For utility trenches, compact each layer of initial and final backfill soil material at 85 percent.

3.14 GRADING

A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.

1. Provide a smooth transition between adjacent existing grades and new grades.
2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.

B. Site Rough Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to elevations required to achieve indicated finish elevations, within the following subgrade tolerances:

1. Turf or Unpaved Areas: Plus or minus 1 inch.
2. Walks: Plus or minus 1 inch.
3. Pavements: Plus or minus 1/2 inch.

C. Grading inside Building Lines: Finish subgrade to a tolerance of 1/2 inch when tested with a 10-foot straightedge.

3.15 PROTECTION

A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.

B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.

1. Scarify or remove and replace soil material to depth as directed by Architect; reshape and recompact.

C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.

1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

3.16 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Remove surplus satisfactory soil and waste materials, including unsatisfactory soil, trash, and debris, and legally dispose of them off Owner's property.

B. Transport surplus satisfactory soil to designated storage areas on Owner's property. Stockpile or spread soil as directed by Architect.

1. Remove waste materials, including unsatisfactory soil, trash, and debris, and legally dispose of them off Owner's property.

END OF SECTION **312000**

SECTION 321216 - ASPHALT PAVING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Hot-mix asphalt paving.
2. Hot-mix asphalt overlay.
3. Hot-mix asphalt patching.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1. Review methods and procedures related to hot-mix asphalt paving including, but not limited to, the following:

    a. Review proposed sources of paving materials, including capabilities and location of plant that will manufacture hot-mix asphalt.
    b. Review requirements for protecting paving work, including restriction of traffic during installation period and for remainder of construction period.

1.4 ACTION SUBMITTALS

A. Product Data: Include technical data and tested physical and performance properties.

1. Herbicide.
2. Paving geotextile.
3. Joint sealant.

B. Hot-Mix Asphalt Designs:

1. Certification, by authorities having jurisdiction, of approval of each hot-mix asphalt design proposed for the Work.
2. For each hot-mix asphalt design proposed for the Work.

C. Sustainable Design Submittals:

1. Product Data: For recycled content, indicating postconsumer and preconsumer recycled content and cost.

D. Samples for Verification: For the following product, in manufacturer's standard sizes unless otherwise indicated:

1. Paving Geotextile: 12 by 12 inches minimum.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For paving-mix manufacturer and testing agency.

B. Material Certificates: Include statement that mixes containing recycled materials will perform equal to mixes produced from all new materials.

1. Aggregates.
2. Asphalt binder.
3. Asphalt cement.
4. Cutback prime coat.
5. Emulsified asphalt prime coat.
6. Tack coat.
7. Fog seal.
8. Undersealing asphalt.

C. Field quality-control reports.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: A paving-mix manufacturer registered with and approved by authorities having jurisdiction or the DOT of state in which Project is located.

B. Testing Agency Qualifications: Qualified in accordance with ASTM D3666 for testing indicated.

1.7 FIELD CONDITIONS

A. Environmental Limitations: Do not apply asphalt materials if subgrade is wet or excessively damp, if rain is imminent or expected before time required for adequate cure, or if the following conditions are not met:

1. Prime Coat: Minimum surface temperature of 60 deg F.
2. Tack Coat: Minimum surface temperature of 60 deg F.
3. Slurry Coat: Comply with weather limitations in ASTM D3910.

4. Asphalt Base Course and Binder Course: Minimum surface temperature of 40 deg F and rising at time of placement.
5. Asphalt Surface Course: Minimum surface temperature of 60 deg F at time of placement.

PART 2 - PRODUCTS

2.1 AGGREGATES

A. General: Use materials and gradations that have performed satisfactorily in previous installations.

B. Coarse Aggregate: ASTM D692/D692M, sound; angular crushed stone, crushed gravel, or cured, crushed blast-furnace slag.

C. Fine Aggregate: ASTM D1073, sharp-edged natural sand or sand prepared from stone, gravel, cured blast-furnace slag, or combinations thereof.

1. For hot-mix asphalt, limit natural sand to a maximum of 20 percent by weight of the total aggregate mass.

D. Mineral Filler: ASTM D242/D242M, rock or slag dust, hydraulic cement, or other inert material.

2.2 ASPHALT MATERIALS

A. Asphalt Binder: ASTM D6373 binder designation PG 64-22.

B. Emulsified Asphalt Prime Coat: ASTM D977 emulsified asphalt, or AASHTO M 208 cationic emulsified asphalt, slow setting, diluted in water, of suitable grade and consistency for application.

C. Tack Coat: ASTM D977 emulsified asphalt, or AASHTO M 208 cationic emulsified asphalt, slow setting, diluted in water, of suitable grade and consistency for application.

D. Water: Potable.

E. Undersealing Asphalt: ASTM D3141/D3141M; pumping consistency.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that subgrade is dry and in suitable condition to begin paving.

B. Proceed with paving only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Protection: Provide protective materials, procedures, and worker training to prevent asphalt materials from spilling, coating, or building up on curbs, driveway aprons, manholes, and other surfaces adjacent to the Work.

B. Proof-roll subgrade below pavements with heavy pneumatic-tired equipment to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades.

1. Completely proof-roll subgrade in one direction, repeating proof-rolling in direction perpendicular to first direction. Limit vehicle speed to 3 mph.
2. Proof-roll with a loaded 10-wheel, tandem-axle dump truck weighing not less than 15 tons.
3. Excavate soft spots, unsatisfactory soils, and areas of excessive pumping or rutting, as determined by Architect, and replace with compacted backfill or fill as directed.

3.3 COLD MILLING

A. Clean existing pavement surface of loose and deleterious material immediately before cold milling. Remove existing asphalt pavement by cold milling to grades and cross sections indicated.

3.4 SURFACE PREPARATION

A. Ensure that prepared subgrade has been proof-rolled and is ready to receive paving. Immediately before placing asphalt materials, remove loose and deleterious material from substrate surfaces.

3.5 HOT-MIX ASPHALT PLACEMENT

A. Machine place hot-mix asphalt on prepared surface, spread uniformly, and strike off. Place asphalt mix by hand in areas inaccessible to equipment in a manner that prevents segregation of mix. Place each course to required grade, cross section, and thickness when compacted.

1. Place hot-mix asphalt base course and binder course in number of lifts and thicknesses indicated.
2. Place hot-mix asphalt surface course in single lift.
3. Spread mix at a minimum temperature of 250 deg F.
4. Begin applying mix along centerline of crown for crowned sections and on high side of one-way slopes unless otherwise indicated.

5. Regulate paver machine speed to obtain smooth, continuous surface free of pulls and tears in asphalt-paving mat.

B. Place paving in consecutive strips not less than 10 feet wide unless infill edge strips of a lesser width are required.

1. After first strip has been placed and rolled, place succeeding strips and extend rolling to overlap previous strips. Overlap mix placement about 1 to 1-1/2 inches from strip to strip to ensure proper compaction of mix along longitudinal joints.
2. Complete a section of asphalt base course and binder course before placing asphalt surface course.

C. Promptly correct surface irregularities in paving course behind paver. Use suitable hand tools to remove excess material forming high spots. Fill depressions with hot-mix asphalt to prevent segregation of mix; use suitable hand tools to smooth surface.

3.6 JOINTS

A. Construct joints to ensure a continuous bond between adjoining paving sections. Construct joints free of depressions, with same texture and smoothness as other sections of hot-mix asphalt course.

1. Clean contact surfaces and apply tack coat to joints.
2. Offset longitudinal joints, in successive courses, a minimum of 6 inches.
3. Offset transverse joints, in successive courses, a minimum of 24 inches.
4. Construct transverse joints at each point where paver ends a day's work and resumes work at a subsequent time. Construct these joints using either "bulkhead" or "papered" method in accordance with AI MS-22, for both "Ending a Lane" and "Resumption of Paving Operations."
5. Compact joints as soon as hot-mix asphalt will bear roller weight without excessive displacement.
6. Compact asphalt at joints to a density within 2 percent of specified course density.

3.7 COMPACTION

A. General: Begin compaction as soon as placed hot-mix paving will bear roller weight without excessive displacement. Compact hot-mix paving with hot hand tampers or with vibratory-plate compactors in areas inaccessible to rollers.

1. Complete compaction before mix temperature cools to 185 deg F.

B. Breakdown Rolling: Complete breakdown or initial rolling immediately after rolling joints and outside edge. Examine surface immediately after breakdown rolling for indicated crown, grade, and smoothness. Correct laydown and rolling operations to comply with requirements.

C. Intermediate Rolling: Begin intermediate rolling immediately after breakdown rolling while hot-mix asphalt is still hot enough to achieve specified density. Continue rolling until hot-mix asphalt course has been uniformly compacted to the following density:

1. Average Density, Marshall Test Method: 96 percent of reference laboratory density in accordance with ASTM D6927 , but not less than 94 percent or greater than 100 percent.
2. Average Density, Rice Test Method: 92 percent of reference maximum theoretical density in accordance with ASTM D2041/D2041M, but not less than 90 percent or greater than 96 percent.

D. Finish Rolling: Finish roll paved surfaces to remove roller marks while hot-mix asphalt is still warm.

E. Edge Shaping: While surface is being compacted and finished, trim edges of pavement to proper alignment. Bevel edges while asphalt is still hot; compact thoroughly.

F. Repairs: Remove paved areas that are defective or contaminated with foreign materials and replace with fresh, hot-mix asphalt. Compact by rolling to specified density and surface smoothness.

G. Protection: After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened.

H. Erect barricades to protect paving from traffic until mixture has cooled enough not to become marked.

3.8 INSTALLATION TOLERANCES

A. Pavement Thickness: Compact each course to produce thickness indicated within the following tolerances:

1. Base Course: Plus or minus 1/2 inch.
2. Surface Course: Plus 1/4 inch, no minus.

B. Pavement Surface Smoothness: Compact each course to produce surface smoothness within the following tolerances as determined by using a 10-foot straightedge applied transversely or longitudinally to paved areas:

1. Base Course: 1/4 inch.
2. Surface Course: 1/8 inch.
3. Crowned Surfaces: Test with crowned template centered and at right angle to crown. Maximum allowable variance from template is 1/4 inch.

C. Asphalt Traffic-Calming Devices: Compact and form asphalt to the shapes indicated and within a tolerance of plus or minus 1/8 inch of height indicated above pavement surface.

3.9 FIELD QUALITY CONTROL

A. Testing Agency: Engage a qualified testing agency to perform tests and inspections.

B. Thickness: In-place compacted thickness of hot-mix asphalt courses will be determined in accordance with ASTM D3549/D3549M.

C. Surface Smoothness: Finished surface of each hot-mix asphalt course will be tested for compliance with smoothness tolerances.

D. Replace and compact hot-mix asphalt where core tests were taken.

E. Remove and replace or install additional hot-mix asphalt where test results or measurements indicate that it does not comply with specified requirements.

3.10 WASTE HANDLING

A. General: Handle asphalt-paving waste in accordance with approved waste management plan required in Section 017419 "Construction Waste Management and Disposal."

END OF SECTION **321216**

SECTION 321313 - CONCRETE PAVING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes Concrete Paving Including the Following:

1. Curbs and gutters.
2. Walks.

1.3 DEFINITIONS

A. Cementitious Materials: Portland cement alone or in combination with one or more of blended hydraulic cement, fly ash, slag cement, and other pozzolans.

B. W/C Ratio: The ratio by weight of water to cementitious materials.

1.4 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1. Review methods and procedures related to concrete paving, including but not limited to, the following:

    a. Concrete mixture design.
    b. Quality control of concrete materials and concrete paving construction practices.

2. Require representatives of each entity directly concerned with concrete paving to attend, including the following:

    a. Contractor's superintendent.
    b. Independent testing agency responsible for concrete design mixtures.
    c. Ready-mix concrete manufacturer.
    d. Concrete paving Subcontractor.
    e. Manufacturer's representative of stamped concrete paving system used for stamped detectable warnings.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Sustainable Design Submittals:

1. Product Data: For recycled content, indicating postconsumer and preconsumer recycled content and cost.
2. Product Certificates: For regional materials, indicating location of material manufacturer and point of extraction, harvest, or recovery for each raw material. Include distance to Project and cost for each regional material.

C. Samples for Initial Selection: For each type of product, ingredient, or admixture requiring color selection.

D. Samples for Verification: For each type of product or exposed finish, prepared as Samples of size indicated below:

1. Exposed Aggregate: 10-lb Sample of each mix.

E. Design Mixtures: For each concrete paving mixture. Include alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For qualified ready-mix concrete manufacturer and testing agency.

B. Material Certificates: For the following, from manufacturer:

1. Cementitious materials.
2. Admixtures.
3. Curing compounds.
4. Applied finish materials.
5. Bonding agent or epoxy adhesive.
6. Joint fillers.

C. Material Test Reports: For each of the following:

1.7 QUALITY ASSURANCE

A. Ready-Mix-Concrete Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C94/C94M requirements for production facilities and equipment.

1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities" (Quality Control Manual - Section 3, "Plant Certification Checklist").

B. Testing Agency Qualifications: Qualified according to ASTM C1077 and ASTM E329 for testing indicated.

1. Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-1 or an equivalent certification program.

C. Mockups: Build mockups to verify selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

1. Build mockups of full-thickness sections of concrete paving to demonstrate typical joints; surface finish, texture, and color; curing; and standard of workmanship.
2. Build mockups of concrete paving in the location and of the size indicated or, if not indicated, build mockups where directed by Architect and not less than 96 inches by 96 inches .
3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.8 PRECONSTRUCTION TESTING

A. Preconstruction Testing Service: Engage a qualified independent testing agency to perform preconstruction testing on concrete paving mixtures.

1.9 FIELD CONDITIONS

A. Traffic Control: Maintain access for vehicular and pedestrian traffic as required for other construction activities.

B. Cold-Weather Concrete Placement: Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing, or low temperatures. Comply with ACI 306.1 and the following:

1. When air temperature has fallen to or is expected to fall below 40 deg F, uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 deg F and not more than 80 deg F at point of placement.
2. Do not use frozen materials or materials containing ice or snow.

3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in design mixtures.

C. Hot-Weather Concrete Placement: Comply with ACI 301 and as follows when hot-weather conditions exist:

1. Cool ingredients before mixing to maintain concrete temperature below 90 deg F at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated in total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
2. Cover steel reinforcement with water-soaked burlap, so steel temperature will not exceed ambient air temperature immediately before embedding in concrete.
3. Fog-spray forms, steel reinforcement (where required), and subgrade just before placing concrete. Keep subgrade moisture uniform without standing water, soft spots, or dry areas.

PART 2 - PRODUCTS

2.1 CONCRETE, GENERAL

A. ACI Publications: Comply with ACI 301 unless otherwise indicated.

2.2 FORMS

A. Form Materials: Plywood, metal, metal-framed plywood, or other approved panel-type materials to provide full-depth, continuous, straight, and smooth exposed surfaces.

1. Use flexible or uniformly curved forms for curves with a radius of 100 feet or less. Do not use notched and bent forms.

B. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and that will not impair subsequent treatments of concrete surfaces.

2.3 CONCRETE MATERIALS

A. Regional Materials: Concrete shall be manufactured within 500 miles of Project site from aggregates and cementitious materials that have been extracted, harvested, or recovered, as well as manufactured, within 500 miles of Project site.

B. Cementitious Materials: Use the following cementitious materials, of same type, brand, and source throughout Project:

1. Portland Cement: ASTM C150/C150M, gray portland cement Type III.
2. Fly Ash: ASTM C618, Class C or Class F.
3. Slag Cement: ASTM C989/C989M, Grade 100 or 120.

C. Normal-Weight Aggregates: ASTM C33/C33M, Class 4S, uniformly graded. Provide aggregates from a single source with documented service-record data of at least 10 years' satisfactory service in similar paving applications and service conditions using similar aggregates and cementitious materials.

1. Maximum Coarse-Aggregate Size: 1 inch nominal.
2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.

D. Exposed Aggregate: Selected, hard, and durable; washed; free of materials with deleterious reactivity to cement or that cause staining; from a single source, with gap-graded coarse aggregate as follows:

1. Aggregate Sizes: 3/4 to 1 inch nominal.

E. Air-Entraining Admixture: ASTM C260/C260M.

F. Chemical Admixtures: Admixtures certified by manufacturer to be compatible with other admixtures and to contain not more than 0.1 percent water-soluble chloride ions by mass of cementitious material.

1. Water-Reducing Admixture: ASTM C494/C494M, Type A.
2. Retarding Admixture: ASTM C494/C494M, Type B.
3. Water-Reducing and Retarding Admixture: ASTM C494/C494M, Type D.
4. High-Range, Water-Reducing Admixture: ASTM C494/C494M, Type F.
5. High-Range, Water-Reducing and Retarding Admixture: ASTM C494/C494M, Type G.
6. Plasticizing and Retarding Admixture: ASTM C1017/C1017M, Type II.

G. Color Pigment: ASTM C979/C979M, synthetic mineral-oxide pigments or colored water-reducing admixtures; color stable, free of carbon black, nonfading, and resistant to lime and other alkalis.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. Alabama Pigments Company, LLC.
b. Bon Tool Co.
c. Brickform; a division of Solomon Colors.
d. Butterfield Color, Inc.
e. Dynamic Color Solutions, Inc.

f. Euclid Chemical Company (The); an RPM company.
g. Hoover Color Corporation.
h. Lambert Corporation.
i. LANXESS Corporation.
j. Matcrete Inc.
k. NewLook International, Inc.
l. Proline Concrete Tools, Inc.
m. QC Construction Products.
n. Scofield, a Business Unit of Sika Corporation.
o. Solomon Colors, Inc.
p. Stampcrete International, Ltd.
q. SureCrete Design Products.
r. Venator Materials PLC.

2. Color: As indicated by manufacturer's designation.

H. Water: Potable and complying with ASTM C94/C94M.

2.4 CURING MATERIALS

A. Absorptive Cover: AASHTO M 182, Class 3, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. dry.

B. Moisture-Retaining Cover: ASTM C171, polyethylene film or white burlap-polyethylene sheet.

C. Water: Potable.

D. Evaporation Retarder: Waterborne, monomolecular, film forming, manufactured for application to fresh concrete.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

a. BASF Corporation; MasterKure ER 50 (Pre-2014: Confilm.
b. Bon Tool Co.; 32-301-B7 BonWay Evaporation Retarder.
c. Brickform; a division of Solomon Colors; Evaporation Retarder.
d. ChemMasters, Inc; Spray-Film.
e. Dayton Superior; AquaFilm Concentrate J74.
f. Euclid Chemical Company (The); an RPM company; Eucobar.
g. Kaufman Products, Inc; VaporAid.
h. Lambert Corporation; LAMBCO Skin.
i. Laticrete International, Inc.; E-CON.
j. Metalcrete Industries; Waterhold.
k. Nox-Crete Products Group; MONOFILM.
l. Sika Corporation; SikaFilm.
m. SpecChem, LLC; SpecFilm.
n. TK Products; TK-2120 TRI-FILM.

o. Vexcon Chemicals Inc.; Certi-Vex EnvioAssist.
p. W.R. Meadows, Inc; EVAPRE.

E. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C309, Type 1, Class B, dissipating.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

a. Anti-Hydro International, Inc; A-H Curing Compound #2 DR WB.
b. ChemMasters, Inc; Safe-Cure Clear DR.
c. Dayton Superior; [Clear Cure VOC J7WB][Clear Resin Cure J11W][Cure & Seal 309 EF][Cure & Seal 309 J18].
d. Euclid Chemical Company (The); an RPM company; Aqua-Cure VOXDiamond Clear VOXKurez DR VOXKurez W VOX.
e. Kaufman Products, Inc; DR Cure.
f. Lambert Corporation; AQUA KURE - CLEAR.
g. Laticrete International, Inc.; L&M CURE R.
h. Nox-Crete Products Group; Res-Cure DH.
i. Right Pointe; Clear Water Resin.
j. SpecChem, LLC; PaveCure Rez.
k. TK Products; TK-2519 DC WB.
l. Unitex by Dayton Superior; Hydroseal 18.
m. Vexcon Chemicals Inc.; Certi-Vex Enviocure 100.
n. W.R. Meadows, Inc; 1100-CLEAR SERIES.

F. White, Waterborne, Membrane-Forming Curing Compound: ASTM C309, Type 2, Class B, dissipating.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

a. Anti-Hydro International, Inc; A-H Curing Compound #2 WP WB.
b. ChemMasters, Inc; Safe-Cure 2000.
c. Dayton Superior; White Resin Cure J10W.
d. Euclid Chemical Company (The); an RPM company; Kurez VOX White Pigmented.
e. Kaufman Products, Inc; Thinfilm 450.
f. Lambert Corporation; AQUA KURE - WHITE.
g. Laticrete International, Inc.; L&M CURE R-2.
h. SpecChem, LLC; PaveCure Rez White.
i. Vexcon Chemicals Inc.; Certi-Vex Enviocure White 100.
j. W.R. Meadows, Inc; [1100-WHITE SERIES][1200-White].

2.5 CONCRETE MIXTURES

A. Prepare design mixtures, proportioned according to ACI 301, for each type and strength of normal-weight concrete, and as determined by either laboratory trial mixtures or field experience.

1. Use a qualified independent testing agency for preparing and reporting proposed concrete design mixtures for the trial batch method.
2. When automatic machine placement is used, determine design mixtures and obtain laboratory test results that comply with or exceed requirements.

B. Cementitious Materials: Use fly ash, pozzolan, slag cement, and silica fume as needed to reduce the total amount of portland cement, which would otherwise be used, by not less than 40 percent.

1. Fly Ash or Pozzolan: 25 percent.
2. Slag Cement: 50 percent.
3. Combined Fly Ash or Pozzolan, and Slag Cement: 50 percent, with fly ash or pozzolan not exceeding 25 percent.

C. Add air-entraining admixture at manufacturer's prescribed rate to result in normal-weight concrete at point of placement having an air content as follows:

1. Air Content, 1-1/2-inch Nominal Maximum Aggregate Size: 4-1/2 percent plus or minus 1-1/2 percent.

D. Chemical Admixtures: Use admixtures according to manufacturer's written instructions.

1. Use water-reducing admixture in concrete as required for placement and workability.
2. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.

E. Synthetic Fiber: Uniformly disperse in concrete mixture at manufacturer's recommended rate, but not less than 1.0 lb/cu. yd..

F. Color Pigment: Add color pigment to concrete mixture according to manufacturer's written instructions and to result in hardened concrete color consistent with approved mockup.

G. Concrete Mixtures: Normal-weight concrete.

1. Compressive Strength (28 Days): 4500 psi .
2. Maximum W/C Ratio at Point of Placement: 0.48.
3. Slump Limit: 4 inches, plus or minus 1 inch.

2.6 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, and mix concrete materials and concrete according to ASTM C94/C94M and ASTM C1116/C1116M. Furnish batch certificates for each batch discharged and used in the Work.

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.

B. Project-Site Mixing: Measure, batch, and mix concrete materials and concrete according to ASTM C94/C94M. Mix concrete materials in appropriate drum-type batch machine mixer.

1. For concrete batches of 1 cu. yd. or smaller, continue mixing at least 1-1/2 minutes, but not more than 5 minutes after ingredients are in mixer, before any part of batch is released.
2. For concrete batches larger than 1 cu. yd., increase mixing time by 15 seconds for each additional 1 cu. yd..
3. Provide batch ticket for each batch discharged and used in the Work, indicating Project identification name and number, date, mixture type, mixing time, quantity, and amount of water added.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine exposed subgrades and subbase surfaces for compliance with requirements for dimensional, grading, and elevation tolerances.

B. Proof-roll prepared subbase surface below concrete paving to identify soft pockets and areas of excess yielding.

1. Completely proof-roll subbase in one direction and repeat in perpendicular direction. Limit vehicle speed to 3 mph.
2. Proof-roll with a pneumatic-tired and loaded, 10-wheel, tandem-axle dump truck weighing not less than 15 tons.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Remove loose material from compacted subbase surface immediately before placing concrete.

3.3 EDGE FORMS AND SCREED CONSTRUCTION

A. Set, brace, and secure edge forms, bulkheads, and intermediate screed guides to required lines, grades, and elevations. Install forms to allow continuous progress of work and so forms can remain in place at least 24 hours after concrete placement.

B. Clean forms after each use and coat with form-release agent to ensure separation from concrete without damage.

3.4 JOINTS

A. General: Form construction, isolation, and contraction joints and tool edges true to line, with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to centerline unless otherwise indicated.

1. When joining existing paving, place transverse joints to align with previously placed joints unless otherwise indicated.

B. Construction Joints: Set construction joints at side and end terminations of paving and at locations where paving operations are stopped for more than one-half hour unless paving terminates at isolation joints.

1. Continue steel reinforcement across construction joints unless otherwise indicated. Do not continue reinforcement through sides of paving strips unless otherwise indicated.
2. Provide tie bars at sides of paving strips where indicated.
3. Butt Joints: Use bonding agent at joint locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
4. Keyed Joints: Provide preformed keyway-section forms or bulkhead forms with keys unless otherwise indicated. Embed keys at least 1-1/2 inches into concrete.
5. Doweled Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or coat with asphalt one-half of dowel length to prevent concrete bonding to one side of joint.

C. Isolation Joints: Form isolation joints of preformed joint-filler strips abutting concrete curbs, catch basins, manholes, inlets, structures, other fixed objects, and where indicated.

1. Locate expansion joints at intervals of 50 feet unless otherwise indicated.
2. Extend joint fillers full width and depth of joint.
3. Terminate joint filler not less than 1/2 inch or more than 1 inch below finished surface if joint sealant is indicated.
4. Place top of joint filler flush with finished concrete surface if joint sealant is not indicated.

5. Furnish joint fillers in one-piece lengths. Where more than one length is required, lace or clip joint-filler sections together.
6. During concrete placement, protect top edge of joint filler with metal, plastic, or other temporary preformed cap. Remove protective cap after concrete has been placed on both sides of joint.

D. Contraction Joints: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of the concrete thickness, as follows, to match jointing of existing adjacent concrete paving:

1. Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint with grooving tool to a 1/4-inch radius. Repeat grooving of contraction joints after applying surface finishes. Eliminate grooving-tool marks on concrete surfaces.

    a. Tolerance: Ensure that grooved joints are within 3 inches either way from centers of dowels.

2. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch- wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before developing random contraction cracks.

    a. Tolerance: Ensure that sawed joints are within 3 inches either way from centers of dowels.

3. Doweled Contraction Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or coat with asphalt one-half of dowel length to prevent concrete bonding to one side of joint.

E. Edging: After initial floating, tool edges of paving, gutters, curbs, and joints in concrete with an edging tool to a 1/4-inch radius. Repeat tooling of edges after applying surface finishes. Eliminate edging-tool marks on concrete surfaces.

3.5 CONCRETE PLACEMENT

A. Before placing concrete, inspect and complete formwork installation and items to be embedded or cast-in.

B. Remove snow, ice, or frost from subbase surface before placing concrete. Do not place concrete on frozen surfaces.

C. Moisten subbase to provide a uniform dampened condition at time concrete is placed. Do not place concrete around manholes or other structures until they are at required finish elevation and alignment.

D. Comply with ACI 301 requirements for measuring, mixing, transporting, and placing concrete.

E. Do not add water to concrete during delivery or at Project site. Do not add water to fresh concrete after testing.

F. Deposit and spread concrete in a continuous operation between transverse joints. Do not push or drag concrete into place or use vibrators to move concrete into place.

G. Consolidate concrete according to ACI 301 by mechanical vibrating equipment supplemented by hand spading, rodding, or tamping.

1. Consolidate concrete along face of forms and adjacent to transverse joints with an internal vibrator. Keep vibrator away from joint assemblies, reinforcement, or side forms. Use only square-faced shovels for hand spreading and consolidation. Consolidate with care to prevent dislocating joint devices.

H. Screed paving surface with a straightedge and strike off.

I. Commence initial floating using bull floats or darbies to impart an open-textured and uniform surface plane before excess moisture or bleedwater appears on the surface. Do not further disturb concrete surfaces before beginning finishing operations or spreading surface treatments.

J. Curbs and Gutters: Use design mixture for automatic machine placement. Produce curbs and gutters to required cross section, lines, grades, finish, and jointing.

K. Slip-Form Paving: Use design mixture for automatic machine placement. Produce paving to required thickness, lines, grades, finish, and jointing.

1. Compact subbase and prepare subgrade of sufficient width to prevent displacement of slip-form paving machine during operations.

3.6 FLOAT FINISHING

A. General: Do not add water to concrete surfaces during finishing operations.

B. Float Finish: Begin the second floating operation when bleedwater sheen has disappeared and concrete surface has stiffened sufficiently to permit operations. Float surface with power-driven floats or by hand floating if area is small or inaccessible to power units. Finish surfaces to true planes. Cut down high spots and fill low spots. Refloat surface immediately to uniform granular texture.

1. Burlap Finish: Drag a seamless strip of damp burlap across float-finished concrete, perpendicular to line of traffic, to provide a uniform, gritty texture.

2. Medium-to-Fine-Textured Broom Finish: Draw a soft-bristle broom across float-finished concrete surface, perpendicular to line of traffic, to provide a uniform, fine-line texture.
3. Medium-to-Coarse-Textured Broom Finish: Provide a coarse finish by striating float-finished concrete surface 1/16 to 1/8 inch deep with a stiff-bristled broom, perpendicular to line of traffic.

3.7 CONCRETE PROTECTION AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.

B. Comply with ACI 306.1 for cold-weather protection.

C. Evaporation Retarder: Apply evaporation retarder to 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.

D. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.

E. Curing Methods: Cure concrete by moisture curing, moisture-retaining-cover curing, curing compound or a combination of these as follows:

1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:

    a. Water.
    b. Continuous water-fog spray.
    c. Absorptive cover, water saturated and kept continuously wet. Cover concrete surfaces and edges with 12-inch lap over adjacent absorptive covers.

2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Immediately repair any holes or tears occurring during installation or 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.

3.8 PAVING TOLERANCES

A. Comply with tolerances in ACI 117 and as follows:

1. Elevation: 3/4 inch.
2. Thickness: Plus 3/8 inch, minus 1/4 inch.
3. Surface: Gap below 10-feet- long; unleveled straightedge not to exceed 1/2 inch.
4. Alignment of Tie-Bar End Relative to Line Perpendicular to Paving Edge: 1/2 inch per 12 inches of tie bar.
5. Joint Spacing: 3 inches.
6. Contraction Joint Depth: Plus 1/4 inch, no minus.
7. Joint Width: Plus 1/8 inch, no minus.

3.9 FIELD QUALITY CONTROL

A. Testing Agency: Engage a qualified testing agency to perform tests and inspections.

B. Testing Services: Testing and inspecting of composite samples of fresh concrete obtained according to ASTM C172/C172M shall be performed according to the following requirements:

1. Testing Frequency: Obtain at least one composite sample for each 100 cu. yd. or fraction thereof of each concrete mixture placed each day.

    a. When frequency of testing will provide fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.

2. Slump: ASTM C143/C143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.
3. Air Content: ASTM C231/C231M, pressure method; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
4. Concrete Temperature: ASTM C1064/C1064M; one test hourly when air temperature is 40 deg F and below and when it is 80 deg F and above, and one test for each composite sample.
5. Compression Test Specimens: ASTM C31/C31M; cast and laboratory cure one set of three standard cylinder specimens for each composite sample.
6. Compressive-Strength Tests: ASTM C39/C39M; test one specimen at seven days and two specimens at 28 days.

    a. A compressive-strength test shall be the average compressive strength from two specimens obtained from same composite sample and tested at 28 days.

C. Strength of each concrete mixture will be satisfactory if average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi.

D. Test results shall be reported in writing to Architect, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.

E. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Architect but will not be used as sole basis for approval or rejection of concrete.

F. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Architect.

G. Concrete paving will be considered defective if it does not pass tests and inspections.

H. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

I. Prepare test and inspection reports.

3.10 REPAIR AND PROTECTION

A. Remove and replace concrete paving that is broken, damaged, or defective or that does not comply with requirements in this Section. Remove work in complete sections from joint to joint unless otherwise approved by Architect.

B. Drill test cores, where directed by Architect, when necessary to determine magnitude of cracks or defective areas. Fill drilled core holes in satisfactory paving areas with portland cement concrete bonded to paving with epoxy adhesive.

C. Protect concrete paving from damage. Exclude traffic from paving for at least 14 days after placement. When construction traffic is permitted, maintain paving as clean as possible by removing surface stains and spillage of materials as they occur.

D. Maintain concrete paving free of stains, discoloration, dirt, and other foreign material. Sweep paving not more than two days before date scheduled for Substantial Completion inspections.

END OF SECTION **321313**

SECTION 323113 - CHAIN LINK FENCES AND GATES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Chain-link fences.
2. Swing gates.

1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1. Inspect and discuss electrical roughing-in, equipment bases, and other preparatory work specified elsewhere.
2. Review sequence of operation for each type of gate operator.
3. Review coordination of interlocked equipment specified in this Section and elsewhere.
4. Review required testing, inspecting, and certifying procedures.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for the following:

a. Fence and gate posts, rails, and fittings.
b. Chain-link fabric, reinforcements, and attachments.
c. Accessories: Barbed wire.
d. Gates and hardware.

B. Shop Drawings: For each type of fence and gate assembly.

1. Include plans, elevations, sections, details, and attachments to other work.
2. Include accessories, hardware, gate operation, and operational clearances.

C. Samples for Initial Selection: For each type of factory-applied finish.

D. Samples for Verification: For each type of component with factory-applied finish, prepared on Samples of size indicated below:

1. Polymer-Coated Components: In 6-inch lengths for components and on full-sized units for accessories.

E. Delegated-Design Submittal: For structural performance of chain-link fence and gate frameworks, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1.4 INFORMATIONAL SUBMITTALS

A. Qualification Data: For factory-authorized service representative.

B. Product Certificates: For each type of chain-link fence, and gate.

C. Product Test Reports: For framework strength according to ASTM F 1043, for tests performed by a qualified testing agency.

D. Field quality-control reports.

E. Sample Warranty: For special warranty.

1.5 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For gate operators to include in emergency, operation, and maintenance manuals.

1.6 QUALITY ASSURANCE

A. Testing Agency Qualifications: For testing fence grounding; member company of NETA or an NRTL.

1. Testing Agency's Field Supervisor: Certified by NETA to supervise on-site testing.

B. Emergency Access Requirements: According to requirements of authorities having jurisdiction for gates with automatic gate operators serving as a required means of access.

C. Mockups: Build mockups to set quality standards for fabrication and installation.

1. Build mockup for typical chain-link fence and gate, including accessories.

a. Size: 10-foot length of fence.

1.7 FIELD CONDITIONS

A. Field Measurements: Verify layout information for chain-link fences and gates shown on Drawings in relation to property survey and existing structures. Verify dimensions by field measurements.

1.8 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of chain-link fences and gates that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Failure to comply with performance requirements.
b. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
c. Faulty operation of gate operators and controls.

2. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Structural Performance: Chain-link fence and gate frameworks shall withstand the design wind loads and stresses for fence height(s) and under exposure conditions indicated according to ASCE/SEI 7.

B. Lightning Protection System: Maximum resistance-to-ground value of 25 ohms at each grounding location along fence under normal dry conditions.

2.2 CHAIN-LINK FENCE FABRIC

A. General: Provide fabric in one-piece heights measured between top and bottom of outer edge of selvage knuckle or twist according to "CLFMI Product Manual" and requirements indicated below:

1. Fabric Height: As indicated on Drawings.
2. Steel Wire for Fabric: Wire diameter of #11 gauge.

a. Mesh Size: 2 inches.
b. Aluminum-Coated Fabric: ASTM A 491, Type I, 0.40 oz./sq. ft..

2.3 FENCE FRAMEWORK

A. Posts and Rails : ASTM F 1043 for framework, including rails, braces, and line; terminal; and corner posts. Provide members with minimum dimensions and wall thickness according to ASTM F 1043 based on the following:

1. Fence Height: As indicated on Drawings.
2. Heavy-Industrial-Strength Material: Group IA, round steel pipe, Schedule 40.

    a. Line Post: 2.5 inches in diameter.
    b. End, Corner, and Pull Posts: 3.0 inches in diameter.

3. Horizontal Framework Members: Intermediate, top and bottom rails according to ASTM F 1043.

    a. Top Rail: 1.66 inches in diameter.

4. Brace Rails: ASTM F 1043.

2.4 TENSION WIRE

A. Metallic-Coated Steel Wire: 0.177-inch- diameter, marcelled tension wire according to ASTM A 817, ASTM A 824 or AASHTO 181-23.1, with the following metallic coating:

1. Type I: Aluminum coated (aluminized).

B. Aluminum Wire: 0.192-inch- diameter tension wire, mill finished, according to ASTM B 211, Alloy 6061-T94 with 50,000-psi minimum tensile strength.

2.5 SWING GATES

A. General: ASTM F 900 for gate posts and singleand double swing gate types.

1. Gate Leaf Width: As indicated.
2. Framework Member Sizes and Strength: Based on gate fabric height as indicated.

B. Pipe and Tubing:

1. Zinc-Coated Steel: ASTM F 1043 and ASTM F 1083; manufacturer's standard protective coating and finish.
2. Aluminum: ASTM B 429/B 429M; manufacturer's standard finish.
3. Gate Posts: Round tubular steel.
4. Gate Frames and Bracing: Round tubular steel.

C. Frame Corner Construction: assembled with corner fittings.

D. Extended Gate Posts and Frame Members: Fabricate gate posts and frame end members to extend as indicated above top of chain-link fabric at both ends of gate frame to attach barbed wire assemblies.

E. Hardware:

1. Hinges: 180-degree inward swing.
2. Latch: Permitting operation from both sides of gate with provision for padlocking accessible from both sides of gate.
3. Lock: Manufacturer's standard internal device.
4. Closer: Manufacturer's standard.

2.6 FITTINGS

A. Provide fittings according to ASTM F 626.

B. Post Caps: Provide for each post.

1. Provide line post caps with loop to receive tension wire or top rail.

C. Rail and Brace Ends: For each gate, corner, pull, and end post.

D. Rail Fittings: Provide the following:

1. Top Rail Sleeves: Aluminum Alloy 6063 not less than 6 inches long.
2. Rail Clamps: Line and corner boulevard clamps for connecting intermediate and bottom rails to posts.

E. Tension and Brace Bands: Aluminum Alloy 6063.

F. Tension Bars: Aluminum, length not less than 2 inches shorter than full height of chain-link fabric. Provide one bar for each gate and end post, and two for each corner and pull post, unless fabric is integrally woven into post.

G. Truss Rod Assemblies: Steel, hot-dip galvanized after threading rod and turnbuckle or other means of adjustment.

H. Barbed Wire Arms: Aluminum, with clips, slots, or other means for attaching strands of barbed wire, and means for attaching to posts , integral with post cap, for each post unless otherwise indicated, and as follows:

1. Provide line posts with arms that accommodate top rail or tension wire.
2. Provide corner arms at fence corner posts unless extended posts are indicated.
3. Single-Arm Type: Type I, slanted arm.

I. Tie Wires, Clips, and Fasteners: According to ASTM F 626.

1. Standard Round Wire Ties: For attaching chain-link fabric to posts, rails, and frames, according to the following:

    a. Hot-Dip Galvanized Steel: 0.148-inch- diameter wire; galvanized coating thickness matching coating thickness of chain-link fence fabric.
    b. Aluminum: ASTM B 211; Alloy 1350-H19; 0.148-inch- diameter, mill-finished wire.

J. Finish:

1. Metallic Coating for Pressed Steel or Cast Iron: Not less than 1.2 oz./sq. ft. of zinc.

    a. Polymer coating over metallic coating.

2. Aluminum: Mill finish.

2.7 BARBED WIRE

A. Steel Barbed Wire: ASTM A 121, two-strand barbed wire, 0.099-inch- diameter line wire with 0.080-inch- diameter, four-point round barbs spaced not more than 5 inches o.c.

1. Aluminum Coating: Type A.

B. Polymer-Coated, Galvanized-Steel Barbed Wire: ASTM F 1665, two-strand barbed wire, 0.080-inch- diameter line wire with 0.080-inch- diameter, four-point, round aluminum alloy barbs spaced not more than 5 inches o.c.:

1. Polymer Coating: Class 2a over aluminum -coated steel wire.

    a. Color: Match chain-link fabric according to ASTM F 934.

2.8 GROUT AND ANCHORING CEMENT

A. Nonshrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107/C 1107M. Provide grout, recommended in writing by manufacturer, for exterior applications.

B. Anchoring Cement: Factory-packaged, nonshrink, nonstaining, hydraulic-controlled expansion cement formulation for mixing with water at Project site to create pourable anchoring, patching, and grouting compound. Provide formulation that is resistant to erosion from water exposure without needing protection by a sealer or waterproof coating, and that is recommended in writing by manufacturer for exterior applications.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and conditions, with Installer present, for compliance with requirements for a certified survey of property lines and legal boundaries, site clearing, earthwork, pavement work, and other conditions affecting performance of the Work.

1. Do not begin installation before final grading is completed unless otherwise permitted by Engineer or owner.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Stake locations of fence lines, gates, and terminal posts. Do not exceed intervals of 500 feet or line of sight between stakes. Indicate locations of utilities, lawn sprinkler system, underground structures, benchmarks, and property monuments.

3.3 CHAIN-LINK FENCE INSTALLATION

A. Install chain-link fencing according to ASTM F 567 and more stringent requirements specified.

1. Install fencing on established boundary lines inside property line.

B. Post Excavation: Drill or hand-excavate holes for posts to diameters and spacings indicated, in firm, undisturbed soil.

C. Post Setting: Set posts in concrete at indicated spacing into firm, undisturbed soil.

1. Verify that posts are set plumb, aligned, and at correct height and spacing, and hold in position during setting with concrete or mechanical devices.
2. Concrete Fill: Place concrete around posts to dimensions indicated and vibrate or tamp for consolidation. Protect aboveground portion of posts from concrete splatter.

a. Exposed Concrete: Extend 2 inches above grade; shape and smooth to shed water.

D. Terminal Posts: Install terminal end, corner, and gate posts according to ASTM F 567 and terminal pull posts at changes in horizontal or vertical alignment of as indicated on Drawings. For runs exceeding 500 feet, space pull posts an equal distance between corner or end posts.

E. Line Posts: Space line posts uniformly at 96 inches o.c.

F. Post Bracing and Intermediate Rails: Install according to ASTM F 567, maintaining plumb position and alignment of fence posts. Diagonally brace terminal posts to adjacent line posts with truss rods and turnbuckles. Install braces at end and gate posts and at both sides of corner and pull posts.

1. Locate horizontal braces at midheight of fabric 72 inches or higher, on fences with top rail, and at two-third fabric height on fences without top rail. Install so posts are plumb when diagonal rod is under proper tension.

G. Tension Wire: Install according to ASTM F 567, maintaining plumb position and alignment of fence posts. Pull wire taut, without sags. Fasten fabric to tension wire with 0.120-inch- diameter hog rings of same material and finish as fabric wire, spaced a maximum of 24 inches o.c. Install tension wire in locations indicated before stretching fabric. Provide horizontal tension wire at the following locations:

1. As indicated on Drawings.

H. Top Rail: Install according to ASTM F 567, maintaining plumb position and alignment of fence posts. Run rail continuously through line post caps, bending to radius for curved runs and terminating into rail end attached to posts or post caps fabricated to receive rail at terminal posts. Provide expansion couplings as recommended in writing by fencing manufacturer.

I. Intermediate and Bottom Rails: Secure to posts with fittings.

J. Chain-Link Fabric: Apply fabric to inside of enclosing framework. Leave 1-inch bottom clearance between finish grade or surface and bottom selvage unless otherwise indicated. Pull fabric taut and tie to posts, rails, and tension wires. Anchor to framework so fabric remains under tension after pulling force is released.

K. Tension or Stretcher Bars: Thread through fabric and secure to end, corner, pull, and gate posts, with tension bands spaced not more than 15 inches o.c.

L. Tie Wires: Use wire of proper length to firmly secure fabric to line posts and rails. Attach wire at one end to chain-link fabric, wrap wire around post a minimum of 180 degrees, and attach other end to chain-link fabric according to ASTM F 626. Bend ends of wire to minimize hazard to individuals and clothing.

1. Maximum Spacing: Tie fabric to line posts at 12 inches o.c. and to braces at 24 inches o.c.

M. Fasteners: Install nuts for tension bands and carriage bolts on the side of fence opposite the fabric side. Peen ends of bolts or score threads to prevent removal of nuts.

N. Barbed Wire: Install barbed wire uniformly spacedas indicated on Drawings. Pull wire taut, install securely to extension arms, and secure to end post or terminal arms.

3.4 GATE INSTALLATION

A. Install gates according to manufacturer's written instructions, level, plumb, and secure for full opening without interference. Attach fabric as for fencing. Attach hardware using tamper-resistant or concealed means. Install ground-set items in concrete for anchorage. Adjust hardware for smooth operation.

3.5 FIELD QUALITY CONTROL

A. Testing Agency: Engage a qualified testing agency to perform tests.

B. Prepare test reports.

3.6 ADJUSTING

A. Gates: Adjust gates to operate smoothly, easily, and quietly, free of binding, warp, excessive deflection, distortion, nonalignment, misplacement, disruption, or malfunction, throughout entire operational range. Confirm that latches and locks engage accurately and securely without forcing or binding.

B. Lubricate hardware and other moving parts.

3.7 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain chain-link fences and gates.

END OF SECTION **323113**

SECTION 330500 - COMMON WORK RESULTS FOR UTILITIES

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 the following:

1. Piped utility demolition.

1.3 DEFINITIONS

A. Exposed Installations: Exposed to view outdoors or subject to outdoor ambient temperatures and weather conditions.

B. Concealed Installations: Concealed from view and protected from weather conditions and physical contact by building occupants but subject to outdoor ambient temperatures. Examples include installations within unheated shelters.

C. ABS: Acrylonitrile-butadiene-styrene plastic.

D. CPVC: Chlorinated polyvinyl chloride plastic.

E. PE: Polyethylene plastic.

F. PVC: Polyvinyl chloride plastic.

1.4 ACTION SUBMITTALS

A. Product Data: For the following:

1. Dielectric fittings.
2. Identification devices.

PART 2 - EXECUTION

2.1 PIPED UTILITY DEMOLITION

A. Refer to Section 024119 "Selective Demolition" for general demolition requirements and procedures.

B. Disconnect, demolish, and remove piped utility systems, equipment, and components indicated to be removed.

1. Piping to Be Removed: Remove portion of piping indicated to be removed to servicing main.
2. Piping to Be Abandoned in Place: Drain piping. Fill abandoned piping with flowable fill, and cap or plug piping with same or compatible piping material.
3. Equipment to Be Removed: Disconnect and cap services and remove equipment.

C. If pipe, insulation, or equipment to remain is damaged in appearance or is unserviceable, remove damaged or unserviceable portions and replace with new products of equal capacity and quality.

END OF SECTION **330500**

605.03 CONSTRUCTION

605.03.01 Chain-Link Fence

Before constructing or placing fence, clear the site as specified in 201.03.01. Remove rock protruding above the ground surface in the fence line.

Where aluminum-coated fence or PVC-coated fence is not designated, the Contractor may use either kind.

Set terminal posts at the beginning and end of each continuous length of fence, at abrupt changes in vertical and horizontal alignment, and on each side of gate locations. Install posts to be set in concrete in dug or drilled holes. Place concrete as specified in 504.03.02.D and allow concrete to cure for at least 72 hours before stretching fence fabric.

If a concrete foundation is not required, the Contractor may drive posts to the required depth if ground conditions permit. When solid rock is encountered, install posts not required to be set in concrete by drilling the rock to the required depth and securing with mortar.

605.03.02 Gates

Install gates necessary for construction operations at selected locations. Set gates according to the manufacturer's recommendations. Provide gates equipped with locks and 2 sets of keys. Provide the keys to the RE. Keep gates padlocked, except when in use during working hours.

605.03.03 Repairing Chain-Link Fence

Provide and erect new fabric where required. Provide new fence fabric of the same type as existing fence. If the same fence fabric cannot be provided, obtain RE approval of equivalent. Straighten top rails and posts, or replace as necessary, as determined by the RE. Replace all tension wire and mend all vertical cuts.

Follow the construction requirements for new fence as specified in 605.03.01. Dispose of unusable materials as specified in 201.03.01.H.

605.03.04 Temporary Chain-Link Fence

Before beginning construction operations, erect temporary chain-link fence required to enclose construction areas. Construct temporary fence as specified in 605.03.01. The Contractor may reuse material as approved by the RE.

Maintain temporary fence as directed during construction, and properly dispose of fence as specified in 017419 "Construction Waste Management and Disposal" after it is no longer required on the Project.

SECTION 901 – AGGREGATES

901.01 SOURCE

Use aggregates from a single source and geological classification in any one construction item unless otherwise authorized. Use only sources of aggregate that are listed on the QPL.

The ME may allow aggregates from different sources if they are of the same geological classification and have similar specific gravities and aggregate properties.

Use test methods for gradation according to the appropriate provisions of AASHTO T 11 or T 27, unless otherwise noted. Gradations of aggregates in the various tables of this and other Sections are the percentages passing by weight.

The aggregate producer shall submit annually, to the ME for approval, a quality control plan for the aggregate products. The aggregate producer may obtain guidelines for developing the quality control plan from the ME upon request.

901.02 STOCKPILES

Provide an area for each stockpile of adequate size, reasonably uniform in cross section, well drained, and cleared of foreign materials.

At concrete and HMA mixing plants, stockpile a sufficient quantity of aggregate to provide for a minimum of 1 day's operations. Place the aggregate stockpiles on a firm, hard surface, such as a compacted aggregate, HMA, or concrete surface. Construct the stockpile by placing the aggregates in layers of not more than 3 feet thick.

Locate the piles so that there is no contamination by foreign material and no intermingling of aggregates from adjacent piles. Do not use steel-tracked equipment on the stockpiles.

Do not store aggregates from different sources, geological classifications, or of different gradings in stockpiles near each other unless a bulkhead is placed between the different materials. If blending aggregates of different gradings and from different sources, proportion through weigh hoppers. The ME may allow loader blending of aggregate stockpiles if included in the approved aggregate producer's quality control plan. The Department will reject aggregates found
segregated or contaminated. If a stockpile is rejected for segregation, the Contractor may reconstruct it for further evaluation. Use methods that prevent segregation when charging aggregates from stockpiles.

Do not use washed aggregates sooner than 24 hours after washing or until the surplus water has drained out and the material has a uniform moisture content.

Do not stockpile RAP higher than 15 feet. Cover or otherwise protect stockpiles of RAP for use in HMA to prevent buildup of moisture.

901.03 COARSE AGGREGATE

Obtain coarse aggregate as specified in 901.01. Use coarse aggregate that is broken stone or washed gravel graded as specified Table 901.03-1. Stockpile coarse aggregate as specified in 901.02.

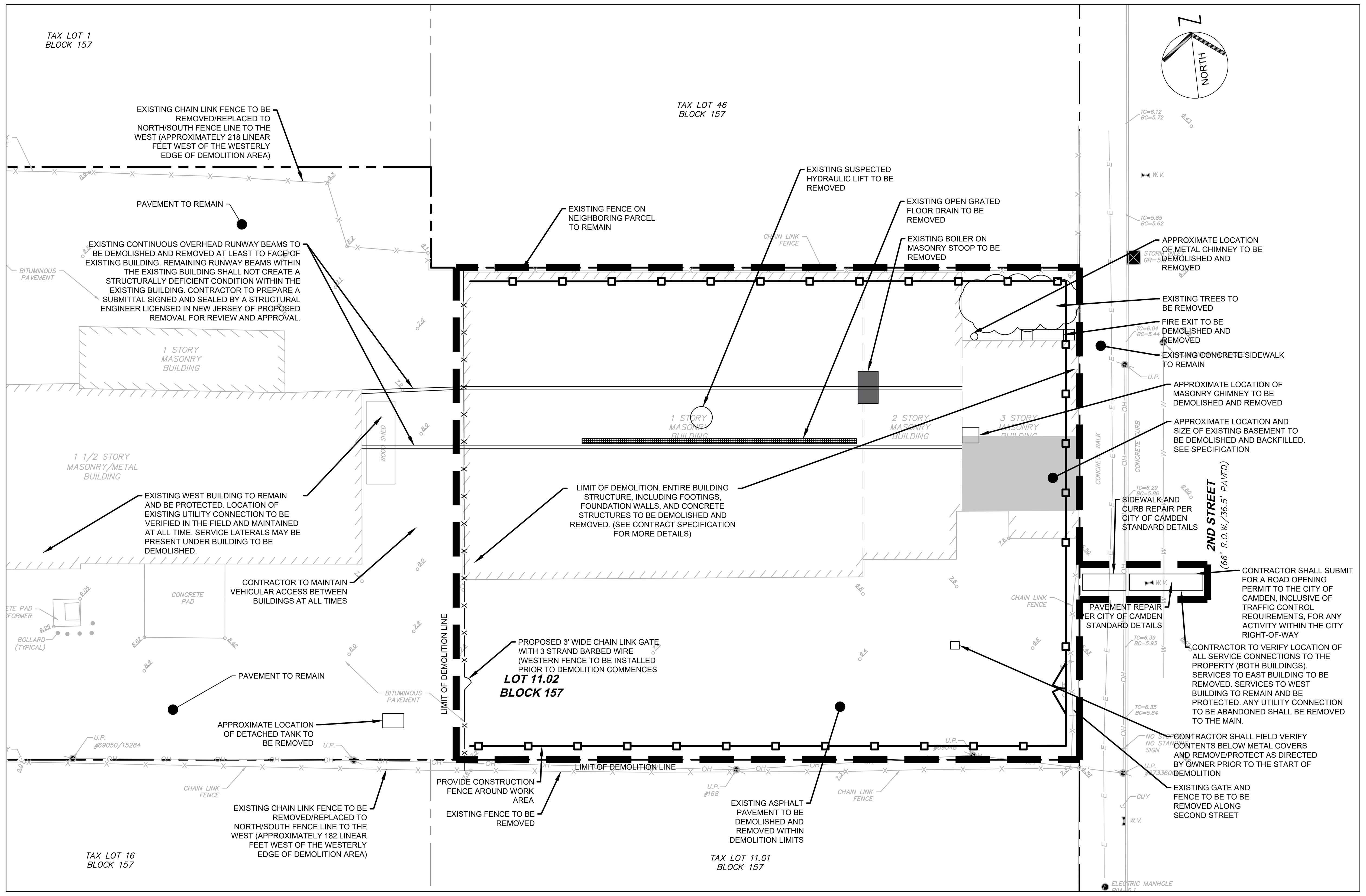
Table 901.03-1 Standard Sizes of Coarse Aggregate

		Amounts Finer than Each Laboratory Sieve, Percentage by Weight														
No.	**Nominal Size**	**4"**	**3 1/2"**	**3"**	**2 1/2"**	**2"**	**1 1/2"**	**1"**	**3/4"**	**1/2"**	**3/8"**	**No. 4**	**No. 8**	**No. 16**	**No. 50**	**No. 100**
1	**3 1/2" – 1 1/2"**	100	90-100		25-60		0-15		0-5							
2	**2 1/2" – 1 1/2"**			100	90-100	35-70	0-15		0-5							
3	**2" – 1"**				100	90-100	35-70	0-15		0-5						
4	**1 1/2" – 3/4"**					100	90-100	20-55	0-15		0-5					
5	**1" – 1/2"**						100	90-100	20-55	0-10	0-5					
57	**1" – No. 4**						100	95-100		25-60		0-10	0-5			
67	**3/4"– No. 4**							100	90-100		20-55	0-10	0-5			
7	**1/2" – No. 4**								100	90-100	40-70	0-15	0-5			
8	**3/8" – No. 8**									100	85-100	10-30	0-10	0-5		
9	**No. 4 – No. 16**										100	85-100	10-40	0-10	0-5	
10	**No. 4 – No. 200**										100	85-100				10-30

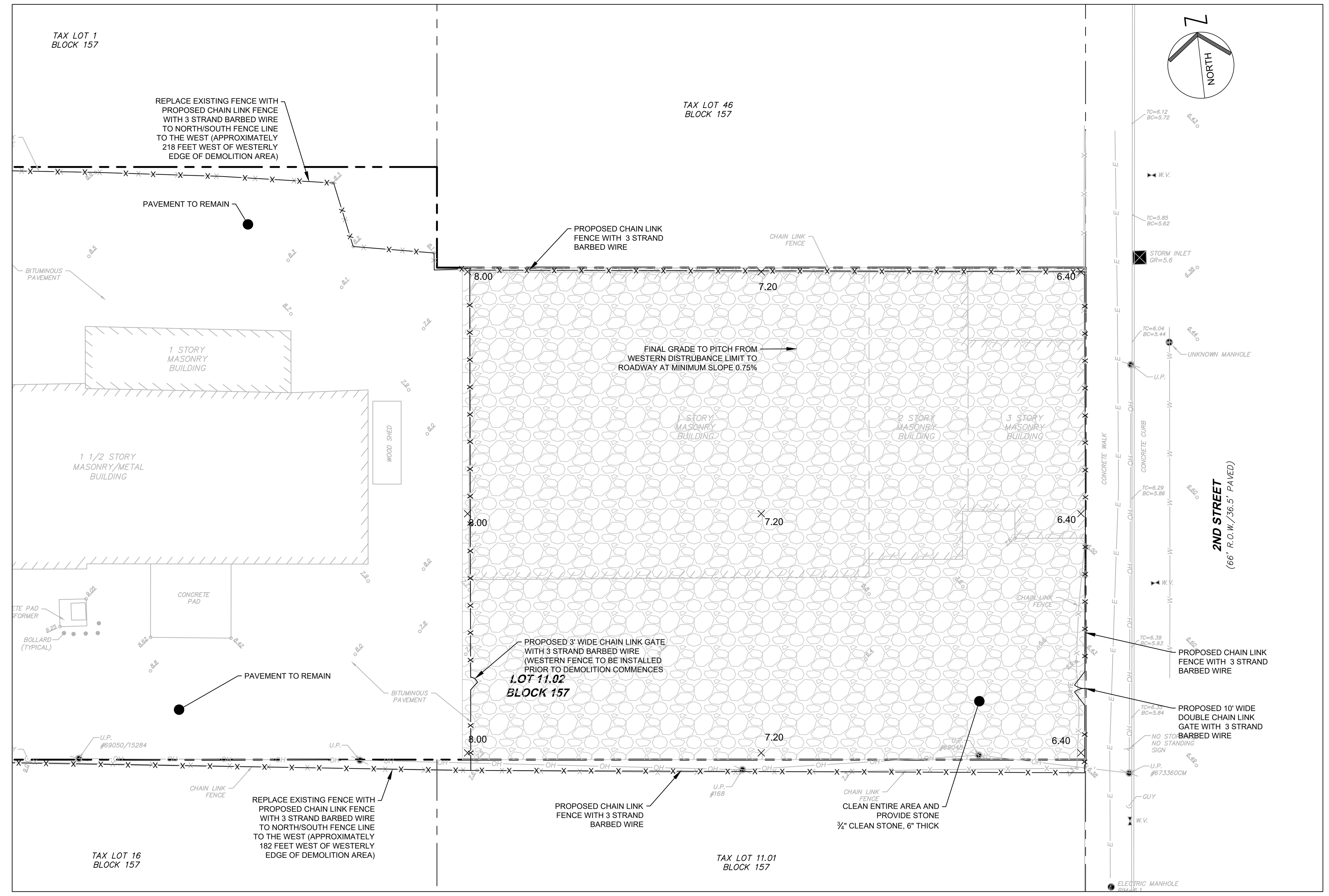
Table 901.03-2 Coarse Aggregate Sampling

Coarse Aggregate, No.	Sample Size (pounds)	Frequency
1	150	1000 tons or 830 cubic yards
2	100	1000 tons or 830 cubic yards
3	90	1000 tons or 830 cubic yards
4	70	1000 tons or 830 cubic yards
5 & 57	50	500 tons or 415 cubic yards
67	30	500 tons or 415 cubic yards
7	20	250 tons or 200 cubic yards
8, 9, & 10 (stone sand)	10	250 tons or 200 cubic yards

Appendix B: Demolition and Restoration Plans



EXISTING CONDITIONS & DEMOLITION PLAN



POST DEMOLITION SITE RESTORATION PLAN

GENERAL NOTES

1. THE OFFICE OF THE CITY ENGINEER SHALL BE NOTIFIED IN ADVANCE OF COMMENCEMENT OF CONSTRUCTION OF ANY IMPROVEMENTS UNDER ITS JURISDICTION.
2. CONTRACTOR SHALL COORDINATE UTILITY MARK OUTS 72 HOURS PRIOR TO ANY DISTURBANCE.
3. ALL SOIL EROSION CONTROL MEASURES MUST BE INSTALLED PRIOR TO THE START OF ANY CONSTRUCTION AND ARE SUBJECT TO INSPECTION BY THE LOCAL SOIL CONSERVATION DISTRICT.
4. THE CONTRACTOR SHALL PROVIDE SUCH TEMPORARY DRAINAGE, SOIL EROSION, AND DUST CONTROL MEASURES AS MAY BE DIRECTED BY THE SJPC, CITY ENGINEER OR OTHER AGENCIES OR DEPARTMENTS TO SATISFY ENVIRONMENTAL CONCERNS.
5. AS INDICATED IN THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" SUFFICIENT CONSTRUCTION WARNING SIGNS ARE TO BE PROVIDED AND MAINTAINED BY CONTRACTORS PERFORMING CONSTRUCTION WORK. SAID SIGNS ARE TO BE MAINTAINED UNTIL CONSTRUCTION IS COMPLETED AND APPROVED BY THE APPROPRIATE CITY INSPECTION PERSONNEL. NO CONSTRUCTION THAT IN ANY WAY INTERFERES WITH ROADWAY TRAFFIC SHALL COMMENCE UNTIL THE APPROPRIATE CONSTRUCTION WARNING SIGNS ARE INSTALLED AND INSPECTED BY THE CITY ENGINEER. ALL SUCH SIGNAGE, STRIPING, PARKING AND TRAFFIC CIRCULATION SHALL BE IN ACCORDANCE WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", AS AMENDED, AS WELL AS THE REQUIREMENTS OF THE CITYITY AND NJDOT.
6. CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THE CITY CONSTRUCTION GUIDELINES FOR STREET OPENINGS WITHIN THE PUBLIC RIGHT OF WAY.
7. ALL ROADWAYS ARE TO BE PASSABLE FOR FIRE DEPARTMENT USE DURING CONSTRUCTION. ANY ROADWAY CLOSURE OR RELOCATION SHALL BE COORDINATED BY THE CONTRACTOR WITH THE FIRE DEPARTMENT TO ENSURE ADEQUATE FIRE PROTECTION FOR ALL AREAS AT ALL TIMES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING WARNING SIGNS, BARRICADES, AND ANY AND ALL SAFETY MEASURES AS MAY BE REQUIRED BY LOCAL CODES, OSHA AND/OR MUTCD.
8. LOCATION OF EXISTING INLETS, CATCH BASINS AND MANHOLES MUST BE FIELD VERIFIED BEFORE WORK MAY COMMENCE. ANY CONFLICTING INFORMATION FROM THAT SHOWN SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ENGINEER.
9. ALL CONSTRUCTION SHOWN HEREIN SHALL CONFORM TO SJPC OR CITY OF CAMDEN STANDARDS, CONSTRUCTION DETAILS, AND SPECIFICATIONS APPLICABLE AS WELL AS THE NJDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION, UNLESS SPECIFICALLY NOTED OTHERWISE. IN CASE OF CONFLICT, THE MORE RESTRICTIVE SHALL GOVERN. CONTRACTOR SHALL NOTIFY DESIGN ENGINEER OF ALL CONFLICTS.
10. THE CONTRACTOR SHALL SUBMIT A DETAILED SCHEDULE SHOWING STARTING AND COMPLETION DATES FOR ALL ASPECTS OF THE WORK. THE SCHEDULE SHALL ADHERE TO ALL REQUIREMENTS OF CONTRACT DOCUMENTS.
11. ALL WORK AND MATERIALS SHALL MEET THE APPLICABLE REQUIREMENTS OF ALL LOCAL CODES AND STANDARDS HAVING JURISDICTION, AND THE FOLLOWING:
    - NEC - NATIONAL ELECTRICAL CODE
    - OSHA - OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION REGULATIONS
    - BOCA - BUILDING OFFICIALS AND CODE ADMINISTRATORS
    - IEEE - INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS
    - ANSI - AMERICAN NATIONAL STANDARDS INSTITUTE
    - NJDOT - NEW JERSEY DEPARTMENT OF TRANSPORTATION
    - MUTCD - MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES
    - NJDEP - NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
    - IBC - INDUSTRIALIZED BUILDINGS COMMISSION
12. BEFORE SUBMITTING PROPOSALS, EACH BIDDER SHALL VISIT THE SITE OF THE WORK TO BECOME ACQUAINTED WITH EXISTING CONDITIONS AND LIMITATIONS. FAILURE TO DO SO SHALL IN NO MANNER RELIEVE THE CONTRACTOR FROM THE OBLIGATIONS OF THE DRAWINGS, SPECIFICATIONS AND/OR CONTRACT, AS STATED OR IMPLIED.
13. CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, EQUIPMENT AND SERVICES AND PERFORM ALL OPERATIONS REQUIRED FOR THE WORK AS INDICATED ON THE DRAWINGS, AND THE PROJECT BID SPECIFICATIONS.
14. ALL EXISTING STRUCTURES AND UTILITIES NOT INDICATED TO BE REMOVED SHALL BE LOCATED, IDENTIFIED, SUPPORTED AND PROTECTED FROM DAMAGE THROUGHOUT THE CONSTRUCTION PERIOD. ALL STRUCTURES DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED AT THE CONTRACTORS EXPENSE AND TO THE SATISFACTION OF THE SJPC.
15. FOLLOWING NOTIFICATION TO THE SOUTH JERSEY PORT CORPORATION (SJPC), THE CONTRACTOR SHALL COORDINATE WITH SJPC TO OBTAIN THE NECESSARY PERMITS FROM THE OFFICE OF THE CITY ENGINEER PRIOR TO THE START OF WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ACQUISITION OF SAID PERMITS.
16. CONTRACTOR WILL PROVIDE A HEALTH AND SAFETY PLAN TO THE SJPC WITHIN TWO (2) WEEKS OF CONTRACT AWARD AND PRIOR TO COMMENCEMENT OF WORK.
17. REGULAR WORK HOURS FOR THE PROJECT ARE 7:00 A.M. TO 4:00 P.M, MONDAY THROUGH FRIDAY.
18. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES, INLETS AND OTHER UTILITY STRUCTURES ARE APPROXIMATE BASED ON EXISTING RECORD DOCUMENTS PROVIDED AND SUBJECT TO FIELD VERIFICATION BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF WORK. CAUTION SHALL BE OBSERVED AT ALL TIMES AS UNDERGROUND AND OVERHEAD LINES MAY EXIST WHICH ARE NOT SHOWN HEREIN. REPORT ANY DISCREPANCIES TO SJPC, PRIOR TO COMMENCEMENT OF WORK
19. THE CONTRACTOR SHALL CONTACT SJPC PRIOR TO THE START OF CONSTRUCTION TO REVIEW THE CONTRACTORS PROJECT SCHEDULE AND TO COORDINATE ALL SITE ACTIVITIES.
20. PRIOR TO THE COMMENCEMENT OF ANY SITE WORK ACTIVITIES, THE CONTRACTOR SHALL DETERMINE THE ACTUAL PHYSICAL LOCATION AND DEPTH OF ALL EXISTING UTILITIES WITHIN THE PROPOSED PROJECT AREA.
21. UNLESS OTHERWISE NOTED, ALL EXISTING PAVED AND UNPAVED/LANDSCAPED OR GRASSED SURFACE DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO MATCH EXISTING CONDITIONS IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY ENGINEER.
22. THE CONTRACTOR SHALL COORDINATE WITH AND OBTAIN APPROVAL FROM THE CITY OF CAMDEN FOR ANY WORK (RELOCATION, MODIFICATION, OR DISTURBANCE) RELATED TO THE EXISTING SANITARY SEWER SYSTEM.
23. **DEMOLITION WORK PLAN**: CONTRACTOR SHALL PREPARE AND SUBMIT A DEMOLITION WORK PLAN THAT PROVIDES A DETAILED SUMMARY OF THE CONTRACTOR'S PROPOSED MEANS AND METHODS, AS WELL AS OTHER COMPONENTS AS DESCRIBED HEREIN.
24. **PERMITS:** CONTRACTOR SHALL SECURE AND MAINTAIN ALL REQUIRED DEMOLITION PERMITS AND ASSOCIATED ROAD OPENING PERMITS IN ACCORDANCE WITH THE CITY OF CAMDEN (CITY) AND OTHER APPLICABLE REGULATIONS. INCLUDING US EPA "NOTIFICATION OF DEMOLITION AND RENOVATION" WHICH SHALL BE SUBMITTED TO THE NEW JERSEY DEPARTMENT OF HEALTH.
25. **INSURANCE:** CONTRACTOR SHALL PROVIDE A COPY OF A CURRENT CERTIFICATE OF INSURANCE AND ANY SUBCONTRACTOR'S CERTIFICATE OF INSURANCE. POLICIES WILL NEED TO INCLUDE WORKER'S COMPENSATION, COMPREHENSIVE GENERAL LIABILITY, AUTOMOBILE LIABILITY AND ENVIRONMENTAL / ASBESTOS AND POLLUTION LIABILITY. COVERAGE SHALL BE WRITTEN ON AN OCCURRENCE BASIS WITH A. M. BEST A-RATED COMPANIES. THE INSURANCE POLICY LIMITS SHALL BE AS REQUIRED BY SOUTH JERSEY PORT CORPORATION (SJPC) AND SHALL ADD A "HOLD HARMLESS INSURANCE STATEMENT" AS REQUIRED BY THE SJPC.
26. **LICENSES:** CONTRACTOR SHALL SUBMIT TO SJPC AND THE CITY ALL APPLICABLE, CURRENT LICENSES. LICENSES SHALL BE KEPT CURRENT FOR THE DURATION OF PROJECT. ALL EMPLOYEES ON SITE MUST BE PROPERLY LICENSED IN ACCORDANCE WITH STATE STATUTES.
27. **TEMPORARY FACILITIES**: CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL TEMPORARY FACILITIES AS DEEMED NECESSARY BY PROJECT REQUIREMENTS INCLUDING, BUT NOT LIMITED TO THAT INDICATED IN THE SITE DEMOLITION PLANS.
28. **WASTE MANAGEMENT PLAN**: CONTRACTOR SHALL SUBMIT A WASTE MANAGEMENT PLAN DETAILING ANTICIPATED WASTE STREAMS, HANDLING, PROCESSING AND PACKAGING OF WASTE STREAMS AND DISPOSITION OF WASTE STREAMS. THE WASTE MANAGEMENT PLAN CAN BE INCLUDED IN THE CONTRACTOR'S CONSTRUCTION WORK PLAN.
29. **MANIFESTS:** THE CONTRACTOR SHALL PROVIDE APPROPRIATE WASTE DISPOSAL MANIFESTS TO BE EXECUTED BY THE COMPANY OR THEIR DESIGNATED REPRESENTATIVE COMPANY.
30. **DEMOLITION WASTE:** UNLESS OTHERWISE INDICATED, DEMOLITION WASTE BECOMES PROPERTY OF CONTRACTOR.
31. **PROJECT KICKOFF MEETING**: CONTRACTOR SHALL CONDUCT A MEETING AT PROJECT SITE FOLLOWING AWARD OF CONTRACT AND PRIOR TO ABATEMENT/DEMOLITION TO:
    - A. INSPECT AND DISCUSS CONDITION OF CONSTRUCTION TO BE DEMOLISHED.
    - B. REVIEW STRUCTURAL LOAD LIMITATIONS OF EXISTING STRUCTURES.
    - C. REVIEW AND FINALIZE BUILDING DEMOLITION SCHEDULE AND VERIFY AVAILABILITY OF DEMOLITION PERSONNEL, EQUIPMENT, AND FACILITIES NEEDED TO MAKE PROGRESS AND AVOID DELAYS.
    - D. REVIEW AND FINALIZE PROTECTION REQUIREMENTS.
    - E. REVIEW PROCEDURES FOR NOISE CONTROL, VIBRATION CONTROL AND DUST CONTROL.
    - F. REVIEW PROCEDURES FOR PROTECTION OF ADJACENT PROPERTIES, ROADS, ETC.
    - G. REVIEW ITEMS TO BE SALVAGED AND RETURNED TO SJPC.
    - H. REVIEW THE DEMOLITION METHOD.
32. **HEALTH AND SAFETY PLAN (HASP):** THE CONTRACTOR SHALL DEVELOP A SITE-SPECIFIC HASP FOR THEIR OPERATIONS THAT MEETS THE REQUIREMENTS OF APPLICABLE FEDERAL, STATE, AND LOCAL REQUIREMENTS AS WELL AS ANY SJPC REQUIREMENTS. THE CONTRACTOR SHALL IMPLEMENT THIS PLAN TAKING PRECAUTIONS AS NECESSARY TO PROTECT THE PUBLIC AND WORK FORCE PERSONNEL FROM POTENTIAL HAZARDS. THE CONTRACTOR SHALL HANDLE ALL WASTES IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL REQUIREMENTS.
33. **EXPLOSIVES:** USE OF EXPLOSIVES IS NOT PERMITTED.
34. **DISPOSAL OF DEMOLISHED MATERIALS**
    - A. REMOVE DEMOLITION WASTE MATERIALS FROM PROJECT SITE AND LEGALLY DISPOSE OF THEM IN AN APPROVED LANDFILL OR RECYCLING FACILITY ACCEPTABLE TO THE SJPC AND AUTHORITIES HAVING JURISDICTION.
      - DO NOT ALLOW DEMOLISHED MATERIALS TO ACCUMULATE ON-SITE.
      - REMOVE AND TRANSPORT DEBRIS IN A MANNER THAT WILL PREVENT SPILLAGE ON ADJACENT SURFACES AND AREAS.
    - B. REMOVE SURPLUS SOIL MATERIAL, UNSUITABLE TOPSOIL, OBSTRUCTIONS, DEMOLISHED MATERIALS, AND WASTE MATERIALS INCLUDING TRASH AND DEBRIS, AND LEGALLY DISPOSE OF THEM OFF SITE.
    - C. SEPARATE RECYCLABLE MATERIALS PRODUCED DURING SITE CLEARING FROM OTHER NONRECYCLABLE MATERIALS. STORE OR STOCKPILE WITHOUT INTERMIXING WITH OTHER MATERIALS AND TRANSPORT THEM TO APPROVED RECYCLING FACILITIES.
    - D. DO NOT BURN DEMOLISHED MATERIALS.
35. **SECURITY NOTES**
    - A. THE CONTRACTOR WILL BE RESPONSIBLE FOR MAINTAINING SECURITY OF THE SITE TWENTY-FOUR (24) HOURS A DAY, SEVEN (7) DAYS A WEEK INCLUDING HOLIDAYS THROUGHOUT THE DURATION OF THE CONTRACT.
    - B. THE CONTRACTOR WILL MAKE NO CLAIM AGAINST SJPC AND SJPC'S CONSULTANTS FOR DAMAGE RESULTING FROM TRESPASSING.
    - C. THE PARTY RESPONSIBLE FOR SECURITY WILL MAKE GOOD ALL DAMAGE TO PROPERTY OF SJPC AND OTHERS RESULTING FROM FAILURE TO PROVIDE ADEQUATE SECURITY.
    - D. IF EXISTING FENCING OR BARRIERS ARE BREACHED OR REMOVED FOR PURPOSES OF CONSTRUCTION, THE CONTRACTOR SHOULD PROVIDE AND MAINTAIN TEMPORARY SECURITY FENCING IN A MANNER SATISFACTORY TO SJPC.
    - E. THE CONTRACTOR WILL MAINTAIN A SECURITY PROGRAM THROUGHOUT DEMOLITION AND RESTORATION OPERATIONS.

SHOP DRAWING SUBMITTALS

1. THE CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS FOR ALL APPLICABLE COMPONENTS OF A UNIT OF CONSTRUCTION.
2. SUBSTITUTIONS OF PROPRIETARY MATERIAL AND/OR PRODUCT SPECIFICATIONS THAT NOTE "OR EQUAL" MUST BE APPROVED BY THE DESIGN ENGINEER. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DEMONSTRATE TO THE SATISFACTION OF THE DESIGN ENGINEER THAT THE SUBSTITUTION IS EQUAL AND ACCEPTABLE.
3. SHOP DRAWINGS AND OTHER SUBMITTALS SHALL BE PROVIDED A MINIMUM OF 12 DAYS IN ADVANCE OF CONTRACTOR'S NEED.

REFERENCE AND BASE INFORMATION NOTES
SURVEY NOTES

1. ALL WORK SHOWN LIES WITHIN THE CITY OF CAMDEN, CAMDEN COUNTY, NEW JERSEY.
2. BOUNDARY, TOPOGRAPHIC AND UTILITY INFORMATION SHOWN IS BASED ON "BASE MAP, LOT 11.02, BLOCK 157, TAX MAP SHEET NO. 3.07, CITY OF CAMDEN, CAMDEN COUNTY, NEW JERSEY" PREPARED BY DW SMITH ASSOCIATES, LLC, DATED 04/27/2021.
3. HORIZONTAL DATUM IS BASED ON NEW JERSEY STATE PLANE COORDINATE SYSTEM, NAD 1983.
4. VERTICAL DATUM IS BASED ON NAVD 1988.

NOTES ON THE USE OF PLANS

1. UNLESS THESE DRAWINGS ARE SPECIFICALLY DESIGNATED AS "CONSTRUCTION ISSUE," THESE DRAWINGS OR THE IMPROVEMENTS DEPICTED HEREIN SHALL NOT BE USED FOR CONSTRUCTION. CONTRACTORS SHALL NOTIFY THE DESIGN ENGINEER TO OBTAIN CONSTRUCTION DOCUMENTS.
2. ALL DIMENSIONS MUST BE VERIFIED BY THE CONTRACTOR. NOTIFY PAULUS, SOKOLOWSKI AND SARTOR OF ANY CONFLICTS, ERRORS, AMBIGUITIES OR DISCREPANCIES IN THE CONTRACT DRAWINGS OR SPECIFICATIONS BEFORE PROCEEDING WITH CONSTRUCTION.
3. INFORMATION FOR DESIGN LAYOUT IS CONTAINED SOLELY IN THE WRITTEN DIMENSIONS, BEARINGS, AND ANGLES CONTAINED ON THE DRAWINGS. DO NOT SCALE THE DRAWINGS TO DETERMINE DIMENSIONS..
4. THESE CONTRACT DRAWINGS CONTAIN DATA INTENDED SPECIFICALLY FOR THE NOTED PROJECT AND THE SJPC. THEY ARE NOT INTENDED FOR USE ON EXTENSIONS OF THIS PROJECT OR FOR REUSE ON ANY OTHER PROJECT. THE COPYING AND/OR MODIFICATION OF THIS DOCUMENT OR ANY OTHER PORTION THEREOF WITHOUT THE WRITTEN PERMISSION OF PAULUS, SOKOLOWSKI, AND SARTOR IS PROHIBITED.
5. THIS DIMENSIONAL INFORMATION IS NOT WARRANTED NOR SHOULD IT BE CONSIDERED AS COMPLETE FOR EVERY ASPECT OF THE LAYOUT. STANDARD PRACTICE REQUIRES THAT THE LAYOUT PERSON CHECK THE DIMENSIONAL DATA CONSISTENCY AND TO MAKE SURVEY CALCULATIONS WHICH ARE CUSTOMARY FOR CONSTRUCTION LAYOUT. IN THE EVENT A QUESTION OR INCONSISTENCY IS DISCOVERED, THE USER SHOULD IMMEDIATELY NOTIFY THE ENGINEER OF RECORD.
6. THE GRAPHICAL INFORMATION CONTAINED IN ELECTRONIC FILES IS INTENDED AS DRAWING DATA ONLY, IT IS NOT INTENDED TO SERVE AS SURVEY LAYOUT DATA.
7. UNLESS INDICATED OTHERWISE, EXISTING FEATURES ARE SHOWN IN HALF TONE, PROPOSED FEATURES ARE SHOWN IN BOLD.
8. THE COPYING AND/OR MODIFICATION OF THIS DOCUMENT OR ANY OTHER PORTION THEREOF WITHOUT THE WRITTEN PERMISSION OF PAULUS, SOKOLOWSKI, AND SARTOR, LLC IS PROHIBITED.
9. THE PROJECT DRAWINGS ARE PART OF THE CONSTRUCTION BID SPECIFICATIONS AND SHALL BE USED IN CONJUNCTION WITH THE BID SPECIFICATIONS. IF THE CONSTRUCTION BID SPECIFICATIONS AND THE DRAWINGS DO NOT AGREE, THE DRAWINGS SHALL HAVE PRECEDENCE.

STRUCTURAL NOTES

1. THE CONTRACTOR IS HEREBY ADVISED THAT THE STRUCTURE TO BE DEMOLISHED IS IN POOR CONDITION AND HAS BEEN DEEMED UNSAFE FOR HABITATION. THE CONTRACTOR SHALL EXERCISE EVERY PRECAUTION WHILE PERFORMING THE SCOPE OF SERVICES. IF NECESSARY, THE CONTRACTOR SHALL ENLIST A STRUCTURAL ENGINEER LICENSED IN THE STATE OF NEW JERSEY TO ADVISE THE CONTRACTOR ON DEMOLITION SEQUENCE AND REQUIRED SAFETY MEASURES.
2. DUE TO AN UNBALANCED LOAD BETWEEN EXISTING GRADE AND GROUND FLOOR/BASEMENT SLAB ON GRADE PER THE APPROXIMATE BASEMENT LOCATION INDICATED, THE FOUNDATION WALLS MAY BECOME UNSTABLE AFTER THE REMOVAL OF THE FLOOR STRUCTURES; THEREFORE, PRIOR TO THE REMOVAL OF THE ROOF/FLOOR STRUCTURES, THE CONTRACTOR MAY BE REQUIRED TO RELIEVE THE PRESSURE ON THE WALLS WITHIN THE LIMIT OF DISTURBANCE AS INDICATED ON THE DRAWINGS. THE CONTRACTOR SHALL REVIEW THIS CONDITION TO CONFIRM ANY ASSOCIATED REQUIREMENTS.
3. IF THERE IS ANY TEMPORARY BRACING REQUIRED TO PROTECT ADJACENT ROADWAYS, PARKING AREAS AND SAFEGUARD UTILITIES, THESE BRACING SYSTEMS SHALL BE DESIGNED BY A STRUCTURAL ENGINEER (RETAINED BY THE CONTRACTOR) LICENSED IN THE STATE OF NEW JERSEY. PRIOR TO DEMOLITION, SIGNED AND SEAL CALCULATIONS WITH DRAWINGS SHALL BE FORWARDED TO THE CITY ENGINEER FOR REVIEW.

UTILITY NOTES

1. ATTENTION OF THE CONTRACTOR IS DIRECTED TO THE FACT THAT THE LOCATION OF UTILITY STRUCTURES AND FACILITIES THAT MAY BE ENCOUNTERED WITHIN AND ADJACENT TO THE LIMITS OF WORK SHOWN ON THE PLANS IS APPROXIMATE. THE ACCURACY AND COMPLETENESS OF THIS INFORMATION IS NOT GUARANTEED BY THE ENGINEER. THE CONTRACTOR SHALL VERIFY IN THE FIELD ALL THE FACTS CONCERNING THE UTILITY INFORMATION, LOCATIONS AND OTHER CONSTRUCTION OBSTACLES PRIOR TO CONSTRUCTION. FURTHER, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING PRIOR TO CONSTRUCTION OF ANY DISCREPANCIES WHICH MAY AFFECT PROJECT DESIGN AND/OR SCOPE. PS&S ASSUMES NO LIABILITY FOR ANY OF THE EXISTING UTILITY INFORMATION SHOWN HEREIN, EXISTING UTILITY LINE LOCATIONS ARE SHOWN FOR SCHEMATIC PURPOSES ONLY AND MAY NOT REPRESENT ALL EXISTING UTILITIES.
2. EXISTING STREET SURFACES AND OTHER SURFACES DISTURBED AND/OR DAMAGED BY THE CONSTRUCTION /DEMOLITION OF FACILITIES FOR THIS PROJECT SHALL BE RESTORED BY THE CONTRACTOR IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY ENGINEER, COUNTY ENGINEER OR NJDOT AS APPLICABLE.
3. ALL EXISTING UTILITY MANHOLE RIMS, VALVE BOXES, ETC. TO BE RESET IN ACCORDANCE WITH THE REQUIREMENTS OF THE APPLICABLE UTILITY COMPANY OR AUTHORITY.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY REQUIRED DEWATERING AND PRECLUDING ANY PONDING OF WATER IN ALL AREAS, EXCEPT AS SPECIFIED ON THE SOIL EROSION AND SEDIMENT CONTROL PERMIT DOCUMENTS (EG. SEDIMENT POND).
5. THE CONTRACTOR SHALL REQUEST UTILITY MARKOUTS AT LEAST SEVENTY-TWO (72) HOURS PRIOR TO ANY SITE DISTURBANCE. CONTRACTOR MUST NOTIFY "NEW JERSEY ONE-CALL" (800-272-1000) PRIOR TO ANY EXCAVATION OR GRADING ACTIVITY.
6. PRIOR TO BUILDING DEMOLITION, THE CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF ALL EXISTING UTILITIES INCLUDING WATER, SANITARY SEWER, GAS AND ELECTRIC (OVERHEAD AND UNDERGROUND) SERVICING OR IMPACTING THE EXISTING BUILDING. ALL UTILITIES SHALL BE CUT AND CAPPED AS REQUIRED BY THE CITY AND SERVICE PROVIDERS. THE CONTRACTOR SHALL OBTAIN CONFIRMATION OF DISCONNECT FOR ALL UTILITIES PRIOR TO BUILDING DEMOLITION.
7. ALL UTILITIES TO BE DEMOLISHED SHALL BE REMOVED TO THE SERVICING MAIN. NO LATERALS OR SERVICE CONNECTIONS SHALL BE ABANDONED IN PLACE.

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

DRAFT

REV. / ISSUE	DATE	DESCRIPTION

CONSULTANT

CONSULTANT

ORIENTATION / KEY PLAN

PAULUS, SOKOLOWSKI AND SARTOR, LLC.
1909 ROUTE 70 EAST
SUITE 307
CHERRY HILL, NEW JERSEY 08003
PHONE: (856) 335-6000
CERTIFICATE OF AUTHORIZATION NO. 24GA28032700

KYLE D. RUTHERFORD, P.E.
PROFESSIONAL ENGINEER
N.J. LIC. NO. GE05276000
SIGNATURE DATE

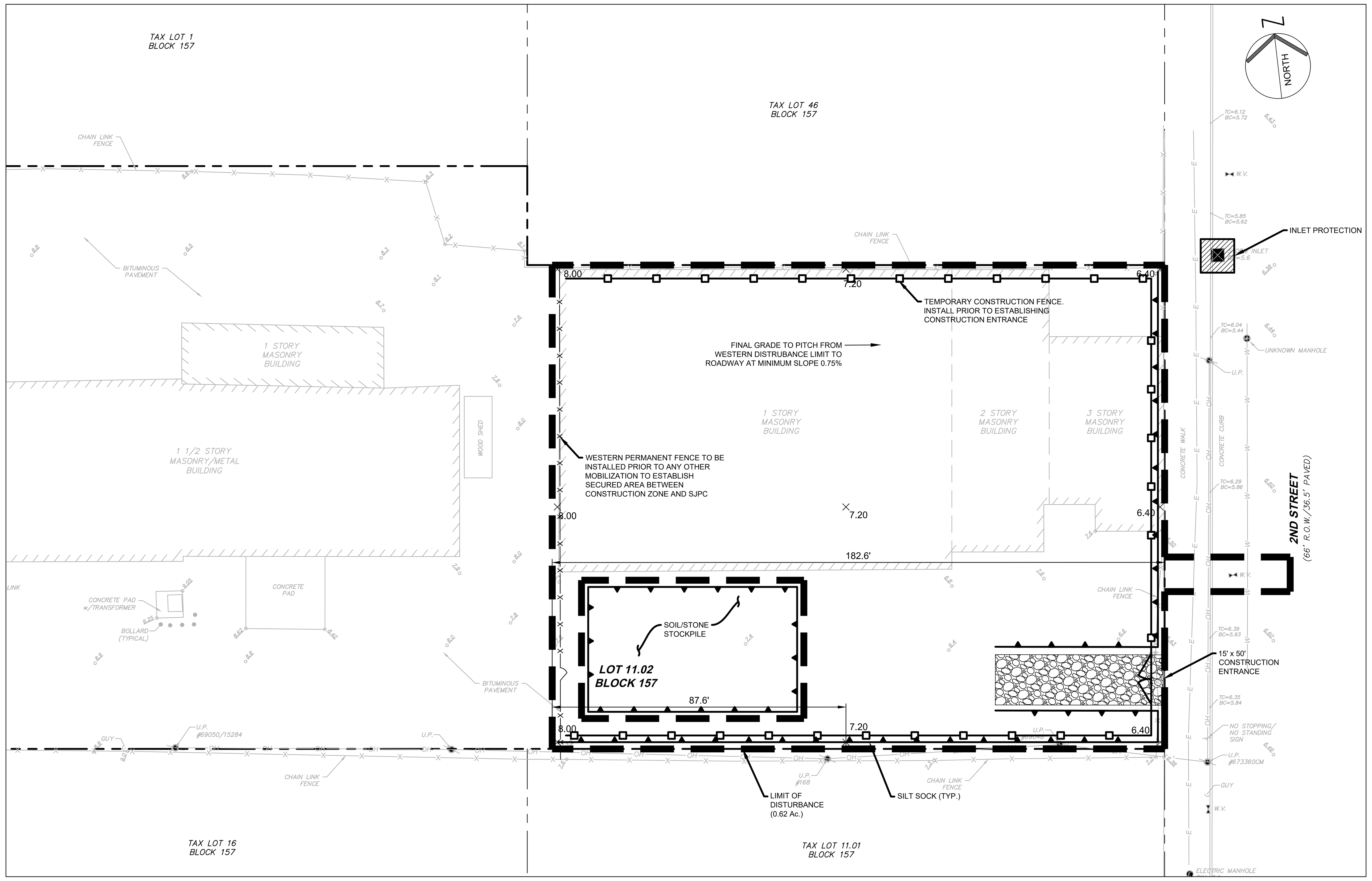
CLIENT
SOUTH JERSEY PORT CORPORATION

PROJECT
551 S. SECOND STREET DEMOLITION
BLOCK 157, LOT 11.02
CITY OF CAMDEN, CAMDEN COUNTY, NEW JERSEY

SHEET TITLE
SITE DEMOLITION AND RESTORATION PLAN

PROJECT NO.:	03690.0001
DATE:	06/11/2021
DRAWN BY:	SM/BRM
CHECKED BY:	KDR
SCALE:	1" = 20'
SHEET 1 OF 3	
SHEET NO.	C-01

FILE NAME: P:\03690\0001\DWGs\C-Civil\Plotdwgs\03690.0001_551St_DemoPlan.dwg\C-01_DM LAST EDIT: 06/23/2021 - 10:33:36 AM LOGIN: krutherford@



SOIL EROSION AND SEDIMENT CONTROL PLAN

SEEDING AND MULCHING SPECIFICATIONS

TEMPORARY STABILIZATION WITH MULCH ONLY

1. UNROTTED SMALL-GRAIN STRAW, AT 2.0 TO 2.5 TONS PER ACRE, IS SPREAD UNIFORMLY AT 90 TO 115 LBS. PER 1,000 SQUARE FEET.
2. OTHER SUITABLE MATERIAL MAY BE USED IF APPROVED BY THE DISTRICT.
3. THIS PRACTICE IS APPLICABLE TO AREAS SUBJECT TO EROSION, WHERE THE SEASON AND OTHER CONDITIONS MAY NOT BE SUITABLE FOR GROWING AN EROSION-RESISTANT COVER OR WHERE STABILIZATION IS NEEDED FOR A SHORT PERIOD UNTIL MORE SUITABLE PROTECTION CAN BE APPLIED.
4. MULCH ANCHORING SHOULD BE ACCOMPLISHED IMMEDIATELY AFTER PLACEMENT OF HAY OR STRAW MULCH TO MINIMIZE LOSS BY WIND OR WATER. ANCHORING SHALL BE COMPLETED BY ONE OF THE FOLLOWING:

4.1. PEG AND TWINE - DRIVE 8 TO 10 INCH WOODEN PEGS TO WITHIN 2 TO 3 INCHES OF THE SOIL SURFACE EVERY 4 FEET IN ALL DIRECTIONS. STAKES MAY BE DRIVEN BEFORE OR AFTER APPLYING MULCH. SECURE MULCH TO SOIL SURFACE BY STRETCHING TWINE BETWEEN PEGS IN A CRISS-CROSS AND SQUARE PATTERN. SECURE TWINE AROUND EACH PEG WITH TWO OR MORE ROUND TURNS.

4.2. MULCH NETTINGS - STAPLE PAPER, COTTON, OR PLASTIC NETTING OVER MULCH. USE DEGRADABLE NETTING IN AREAS TO BE MOWED. NETTING IS USUALLY AVAILABLE IN ROLLS 4 FEET WIDE AND UP TO 300 FEET LONG.

TEMPORARY SEEDING

1. SITE PREPARATION
   A. GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION, AND MULCH ANCHORING. ALL GRADING SHOULD BE DONE IN ACCORDANCE WITH STANDARD FOR LAND GRADING, SECTION 19 OF THE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY.
   B. INSTALL NEEDED EROSION CONTROL PRACTICES OR FACILITIES.
   C. IMMEDIATELY PRIOR TO SEEDING, THE SURFACE SHOULD BE SCARIFIED 6" TO 12" WHERE THERE HAS BEEN SOIL COMPACTION. THIS PRACTICE IS PERMISSIBLE ONLY WHERE THERE IS NO DANGER TO UNDERGROUND UTILITIES.
2. SEEDBED PREPARATION
   A. APPLY GROUND LIMESTONE AND FERTILIZER PER RUTGERS CO-OPERATIVE EXTENSION RECOMMENDATIONS. FERTILIZER SHALL BE APPLIED AT THE RATE OF 500 LBS/AC. (11 LBS/1,000 SQ.FT.) OF 10-20-10 OR EQUIVALENT WITH 50% WATER INSOLUBLE NITROGEN. APPLY LIMESTONE AT AN APPROPRIATE RATE BASED ON TESTING RESULTS. INCORPORATE INTO THE SURFACE 4 INCHES WITH A DISC, SPRING-TOOTH HARROW, OR OTHER SUITABLE EQUIPMENT.
3. SEEDING (COOL SEASON)
   A. SEED MIX: PERENNIAL RYEGRASS
   B. SEEDING RATE: 100 LBS/AC. (1.0 LBS/1,000 SQ.FT.)
   C. OPTIMUM SEEDING DATES: 02/15 THRU 05/01, 08/15 THRU 10/15
   D. OPTIMUM SEED DEPTH: 0.5 INCHES
4. SEEDING (WARM SEASON)
   A. SEED MIX: PEARL MILLET
   B. SEEDING RATE: 20 LBS/AC. (0.5 LBS/1,000 SQ.FT.)
   C. SEEDING DATES: 05/01 THRU 09/01
   D. OPTIMAL SEED DEPTH: 1.0 INCHES
5. MULCHING: STRAW OR HAY IS REQUIRED ON ALL SEEDING.
   MULCHING RATE: 1-1/2 TO 2 TONS/AC. (70-90 LBS/1,000 SQ.FT.)
   ANCHORING: PEG AND TWINE OR MULCH NETTING

PERMANENT SEEDING

1. TOPSOIL SHOULD BE HANDLED ONLY WHEN IT IS DRY ENOUGH TO WORK WITHOUT DAMAGING THE SOIL STRUCTURE. A UNIFORM APPLICATION TO A DEPTH OF 5.0 INCHES (UNSETTLED) IS REQUIRED.
2. UNIFORMLY APPLY GROUND LIMESTONE AND FERTILIZER TO TOPSOIL WHICH HAS BEEN SPREAD AND FIRMED, ACCORDING TO SOIL TEST RECOMMENDATIONS SUCH AS OFFERED BY RUTGERS CO-OPERATIVE EXTENSION SOIL SAMPLE MAILERS.

2.1. FERTILIZER SHALL BE APPLIED AT THE RATE OF 500 LBS PER ACRE OR 11 LBS PER 1,000 SF OF 10-10-10 OR EQUIVALENT WITH 50% WATER INSOLUBLE NITROGEN UNLESS A SOIL TEST INDICATES OTHERWISE AND INCORPORATE INTO THE SURFACE 4 INCHES.

2.2. IF FERTILIZER IS NOT INCORPORATED, APPLY ONE-HALF THE RATE DESCRIBED ABOVE DURING SEEDBED PREPARATION AND REPEAT ANOTHER ONE-HALF RATE APPLICATION OF THE SAME FERTILIZER WITHIN 3 TO 5 WEEKS AFTER SEEDING.

3. SOILS HAVING A pH OF 4 OR LESS OR CONTAINING IRON SULFIDE SHALL BE COVERED WITH A MINIMUM OF 12 INCHES OF SOIL HAVING A pH OF 5 OR MORE BEFORE INITIATING SEEDBED REPARATION.
4. PLANT HARDINESS ZONE: 7A; SEED MIX #13 WITH OPTIMUM SEEDING DATES OF 8/15-10/03 AND ACCEPTABLE SEEDING DATES OF 2/1-4/30 AND 5/1-8/14:

PRODUCT	RATE
HARD FESCUE AND/OR CHEWING FESCUE AND/OR STRONG CREEPING RED FESCUE	175 LBS, PER ACRE
PERENNIAL RYEGRASS	45 LBS, PER ACRE
KENTUCKY BLUEGRASS BLEND	45 LBS. PER ACRE

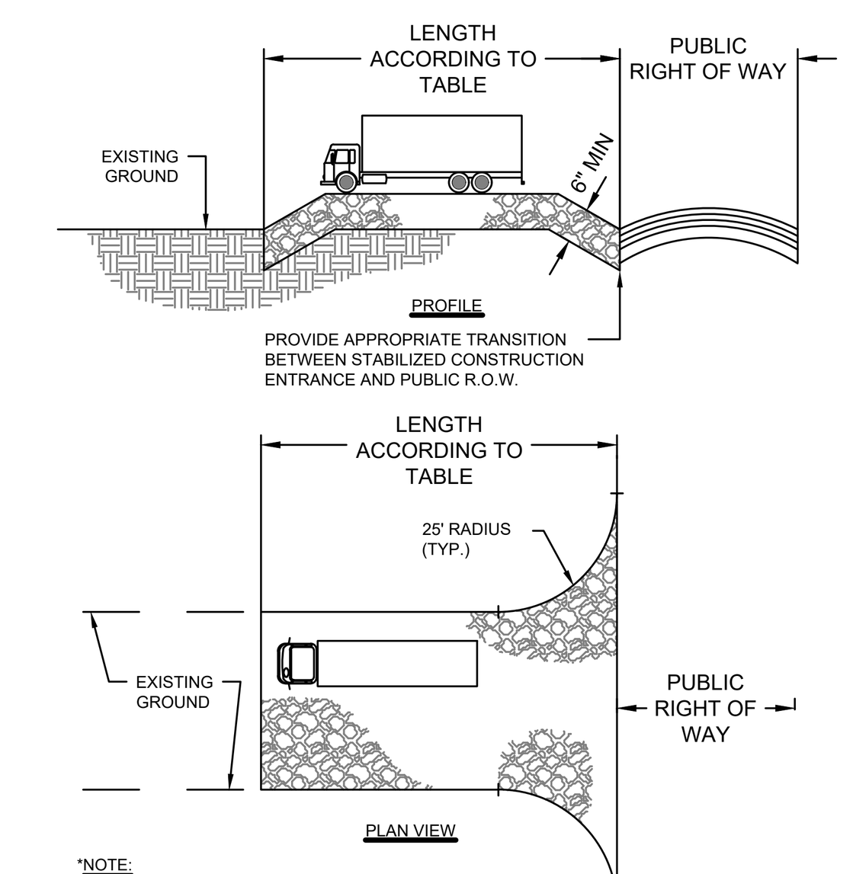
BACKUP SEED MIX #16 WITH OPTIMUM SEEDING DATES OF 8/15-10/03 AND ACCEPTABLE SEEDING DATES OF 2/1-4/30 AND 5/1-8/14:

PRODUCT	RATE
ROUGH BLUE GRASS	90 LBS, PER ACRE
STRONG CREEPING RED FESCUE	130 LBS, PER ACRE

5. SUMMER SEEDINGS SHOULD ONLY BE CONDUCTED WHEN THE SITE IS IRRIGATED. SEED SHALL BE APPLIED IN ACCORDANCE WITH THE *STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY*.
6. MULCHING IS REQUIRED ON ALL SEEDING. UNROTTED SMALL GRAIN STRAW, HAY FREE OF SEEDS, SHALL BE APPLIED AT THE RATE OF 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS PER 1,000 SF). MULCH ANCHORING SHOULD BE ACCOMPLISHED IMMEDIATELY AFTER PLACEMENT OF HAY OR STRAW MULCH TO MINIMIZE LOSS BY WIND OR WATER. ANCHORING SHALL BE COMPLETED BY ONE OF THE FOLLOWING:

6.1. PEG AND TWINE - DRIVE 8 TO 10 INCH WOODEN PEGS TO WITHIN 2 TO 3 INCHES OF THE SOIL SURFACE EVERY 4 FEET IN ALL DIRECTIONS. STAKES MAY BE DRIVEN BEFORE OR AFTER APPLYING MULCH. SECURE MULCH TO SOIL SURFACE BY STRETCHING TWINE BETWEEN PEGS IN A CRISS-CROSS AND SQUARE PATTERN. SECURE TWINE AROUND EACH PEG WITH TWO OR MORE ROUND TURNS.

6.2. MULCH NETTINGS - STAPLE PAPER, COTTON, OR PLASTIC NETTING OVER MULCH. USE DEGRADABLE NETTING IN AREAS TO BE MOWED. NETTING IS USUALLY AVAILABLE IN ROLLS 4 FEET WIDE AND UP TO 300 FEET LONG.



*NOTE: INDIVIDUAL LOT ACCESS POINTS MAY REQUIRE STABILIZATION. THICKNESS SHOWN IS FOR STONE CONSTRUCTION ENTRANCES ONLY (TYP.).

DESIGN CRITERIA

STONE SIZE - USE ASTM C-33, SIZE No. 2 (2 1/2 TO 1 1/2") OR 3 (2 TO 1"). USE CLEAN CRUSHED ANGULAR STONE. CRUSHED CONCRETE OF SIMILAR SIZE MAY BE SUBSTITUTED BUT WILL REQUIRE MORE FREQUENT UPGRADING AND MAINTENANCE.

THICKNESS - NOT LESS THAN SIX (6) INCHES.

WIDTH - NOT LESS THAN FULL WIDTH OF POINTS OF INGRESS OR EGRESS.

LENGTH - 50 FEET MINIMUM WHERE THE SOILS ARE COURSE GRAINED (SANDS OR GRAVEL) OR 100 FEET MINIMUM WHERE SOILS ARE FINE GRAINED (CLAYS OR SILTS), EXCEPT WHERE TRAVELED LENGTH IS LESS THAN 50 OR 100 FEET RESPECTIVELY. THESE LENGTHS MAY BE INCREASED WHERE FIELD CONDITIONS DICTATE. STORMWATER FROM UP-SLOPE AREAS SHALL BE DIVERTED AWAY FROM THE STABILIZED PAD (SEE "STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NJ" FOR DIVERSIONS, PG. 15-1). WHERE DIVERSION IS NOT POSSIBLE, THE LENGTH OF THE STABILIZED PAD SHALL BE AS SHOWN IN TABLE BELOW. WHERE THE SLOPE OF THE ACCESS ROAD EXCEEDS 5%, A STABILIZED BASE COURSE OF FINE AGGREGATE BITUMINOUS CONCRETE (FABC) SHALL BE INSTALLED. THE TYPE AND THICKNESS OF THE FABC AND USE OF A DENSE GRADE AGGREGATE SUB-BASE SHALL BE AS PRESCRIBED BY LOCAL MUNICIPAL ORDINANCE OR OTHER GOVERNING AUTHORITY. AT POORLY DRAINED LOCATIONS, SUBSURFACE DRAINAGE GRAVEL FILTER OR GEOTEXTILE SHALL BE INSTALLED BEFORE INSTALLING THE STABILIZED CONSTRUCTION ENTRANCE.

MAINTENANCE

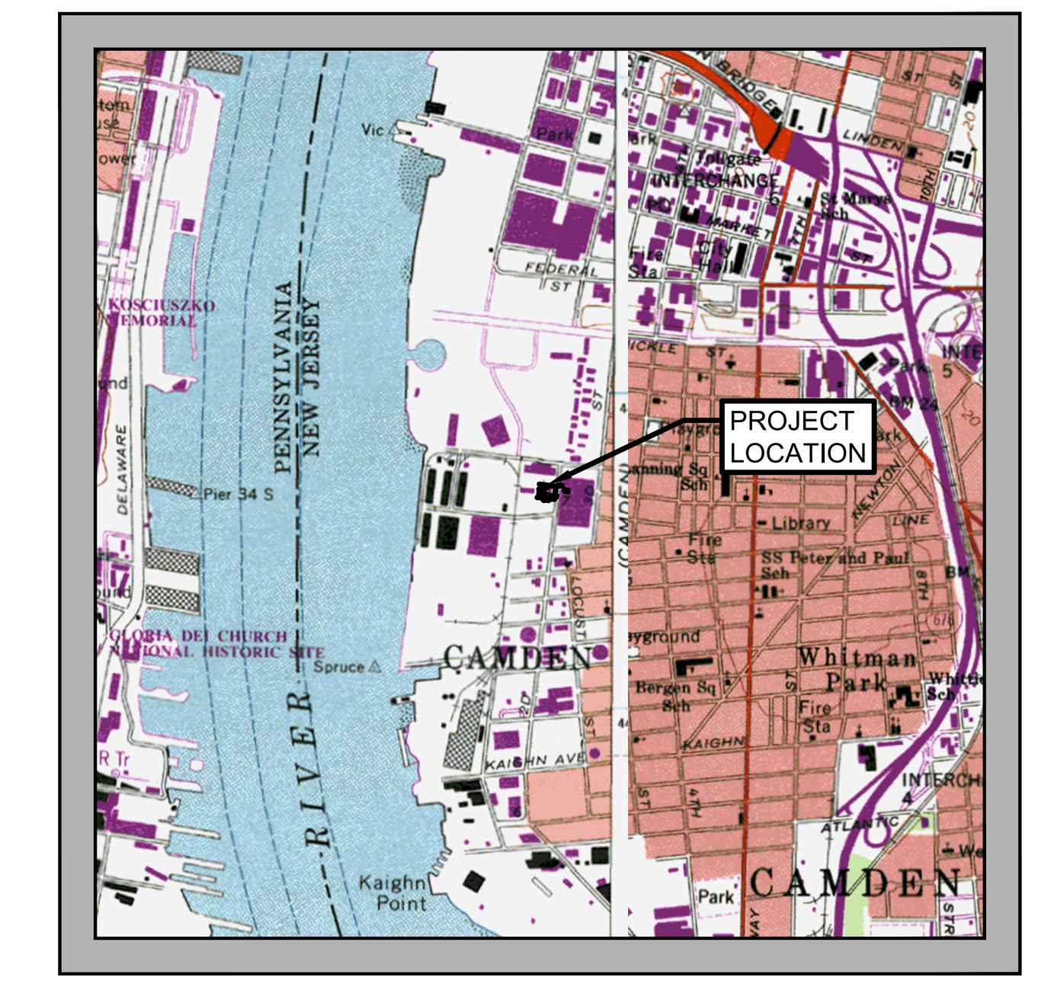
THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO ROADWAYS. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE OR ADDITIONAL LENGTH AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO ROADWAYS (PUBLIC OR PRIVATE) OR OTHER IMPERVIOUS SURFACES MUST BE REMOVED IMMEDIATELY.

WHERE ACCUMULATION OF DUST/SEDIMENT IS INADEQUATELY CLEANED OR REMOVED BY CONVENTIONAL METHODS, A POWER BROOM OR STREET SWEEPER WILL BE REQUIRED TO CLEAN PAVED OR IMPERVIOUS SURFACES. ALL OTHER ACCESS POINTS WHICH ARE NOT STABILIZED SHALL BE BLOCKED OFF.

TABLE OF LENGTHS OF CONSTRUCTION EXITS ON SLOPING ROADBEDS		
	LENGTH OF STONE REQUIRED	
PERCENT SLOPE OF ROADWAY	COARSE GRAINED SOILS	FINE GRAINED SOILS
0 TO 2%	50 ft.	100 ft.
2 TO 5%	100 ft.	200 ft.
> 5%	ENTIRE SURFACE STABILIZED WITH FABRIC BASE COURSE (NOTE 1)	

1. AS PRESCRIBED BY LOCAL ORDINANCE OR OTHER GOVERNING AUTHORITY

3 STABILIZED CONSTRUCTION ACCESS
SCALE: NTS



USGS KEY MAP
SOURCE: PHILADELPHIA QUAD
SCALE: 1" = 2,000'

CAMDEN COUNTY SOIL CONSERVATION DISTRICT NOTES

1. ALL APPLICABLE EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE IN PLACE PRIOR TO ANY GRADING OPERATION AND/OR INSTALLATION OF PROPOSED STRUCTURES OR UTILITIES.
2. SOIL EROSION AND SEDIMENT CONTROL PRACTICES ON THIS PLAN SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY.
3. APPLICABLE EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE LEFT IN PLACE UNTIL CONSTRUCTION IS COMPLETED AND/OR THE AREA IS STABILIZED.
4. THE CONTRACTOR SHALL PERFORM ALL WORK, FURNISH ALL MATERIALS AND INSTALL ALL MEASURES REQUIRED TO REASONABLY CONTROL SOIL EROSION RESULTING FROM CONSTRUCTION OPERATIONS AND PREVENT EXCESSIVE FLOW OF SEDIMENT FROM THE CONSTRUCTION SITE.
5. ANY DISTURBED AREA THAT IS TO BE LEFT EXPOSED FOR MORE THAN THIRTY (30) DAYS AND NOT SUBJECT TO CONSTRUCTION TRAFFIC SHALL IMMEDIATELY RECEIVE A TEMPORARY SEEDING AND FERTILIZATION IN ACCORDANCE WITH THE NEW JERSEY STANDARDS AND THEIR RATES SHOULD BE INCLUDED IN THE NARRATIVE. IF THE SEASON PROHIBITS TEMPORARY SEEDING, THE DISTURBED AREAS WILL BE MULCHED WITH SALT HAY OR EQUIVALENT AND ANCHORED IN ACCORDANCE WITH THE NEW JERSEY STANDARDS (I.E. PEG AND TWINE, MULCH NETTING OR LIQUID MULCH BINDER).
6. IT SHALL BE THE RESPONSIBILITY OF THE DEVELOPER TO PROVIDE CONFIRMATION OF LIME, FERTILIZER AND SEED APPLICATION AND RATES OF APPLICATION AT THE REQUEST OF THE CAMDEN COUNTY SOIL CONSERVATION DISTRICT.
7. ALL CRITICAL AREAS SUBJECT TO EROSION WILL RECEIVE A TEMPORARY SEEDING IN COMBINATION WITH STRAW MULCH AT A RATE OF 2 TONS PER ACRE, ACCORDING TO THE NEW JERSEY STANDARDS IMMEDIATELY FOLLOWING ROUGH GRADING.
8. THE SITE SHALL AT ALL TIMES BE GRADED AND MAINTAINED SUCH THAT ALL STORMWATER RUNOFF IS DIVERTED TO SOIL EROSION AND SEDIMENT CONTROL FACILITIES.
9. ALL SEDIMENTATION STRUCTURES WILL BE INSPECTED AND MAINTAINED ON A REGULAR BASIS AND AFTER EVERY STORM EVENT.
10. A CRUSHED STONE, TIRE CLEANING PAD WILL BE INSTALLED WHEREVER A CONSTRUCTION ACCESS EXISTS. THE STABILIZED PAD WILL BE INSTALLED ACCORDING TO THE STANDARD FOR STABILIZED CONSTRUCTION ACCESS
11. ALL DRIVEWAYS MUST BE STABILIZED WITH 2 ½" CRUSHED STONE OR SUBBASE PRIOR TO INDIVIDUAL LOT CONSTRUCTION.
12. PAVED ROADWAYS MUST BE KEPT CLEAN AT ALL TIMES.
13. ALL CATCH BASIN INLETS WILL BE PROTECTED ACCORDING TO THE CERTIFIED PLAN.
14. ALL STORM DRAINAGE OUTLETS WILL BE STABILIZED, AS REQUIRED, BEFORE THE DISCHARGE POINTS BECOME OPERATIONAL.
15. ALL DEWATERING OPERATIONS MUST DISCHARGE DIRECTLY INTO A SEDIMENT FILTER AREA. THE SEDIMENT FILTER SHOULD BE COMPOSED OF A SUITABLE SEDIMENT FILTER FABRIC. (SEE DETAIL) THE BASIN MUST BE DEWATERED TO NORMAL POOL WITHIN 10 DAYS OF THE DESIGN STORM.
16. NJSA 4:24-39, ET SEQ. REQUIRES THAT NO CERTIFICATE OF OCCUPANCY BE ISSUED BEFORE ALL PROVISIONS OF THE CERTIFIED SOIL EROSION AND SEDIMENT CONTROL PLAN HAVE BEEN COMPLIED WITH FOR PERMANENT MEASURES. ALL SITE WORK FOR THE PROJECT MUST BE COMPLETED PRIOR TO THE DISTRICT ISSUING A REPORT OF COMPLIANCE AS A PREREQUISITE TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY BY THE MUNICIPALITY.
17. MULCHING IS REQUIRED ON ALL SEEDED AREAS TO INSURE AGAINST EROSION BEFORE GRASS IS ESTABLISHED TO PROMOTE EARLIER VEGETATION COVER.
18. OFFSITE SEDIMENT DISTURBANCE MAY REQUIRE ADDITIONAL CONTROL MEASURES TO BE DETERMINED BY THE EROSION CONTROL INSPECTOR.
19. A COPY OF THE CERTIFIED SOIL EROSION AND SEDIMENT CONTROL PLAN MUST BE MAINTAINED ON THE PROJECT SITE DURING CONSTRUCTION.
20. THE CAMDEN COUNTY SOIL CONSERVATION DISTRICT SHALL BE NOTIFIED 72 HOURS PRIOR TO ANY LAND DISTURBANCE.
21. ANY CONVEYANCE OF THIS PROJECT PRIOR TO ITS COMPLETION WILL TRANSFER FULL RESPONSIBILITY FOR COMPLIANCE WITH THE CERTIFIED PLAN TO ANY SUBSEQUENT OWNERS.
22. IMMEDIATELY AFTER THE COMPLETION OF STRIPPING AND STOCKPILING OF TOPSOIL, THE STOCKPILE MUST BE STABILIZED ACCORDING TO THE STANDARD FOR TEMPORARY VEGETATIVE COVER. STABILIZE TOPSOIL PILE WITH STRAW MULCH FOR PROTECTION IF THE SEASON DOES NOT PERMIT THE APPLICATION AND ESTABLISHMENT OF TEMPORARY SEEDING. ALL SOIL STOCKPILES ARE NOT TO BE LOCATED WITHIN FIFTY (50) FEET OF A FLOODPLAIN, SLOPE, ROADWAY OR DRAINAGE FACILITY AND THE BASE MUST BE PROTECTED WITH A SEDIMENT BARRIER.
23. ANY CHANGES TO THE SITE PLAN WILL REQUIRE THE SUBMISSION OF A REVISED SOIL EROSION AND SEDIMENT CONTROL PLAN TO THE CAMDEN COUNTY SOIL CONSERVATION DISTRICT. THE REVISED PLAN MUST BE IN ACCORDANCE WITH THE CURRENT NEW JERSEY STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL.
24. METHODS FOR THE MANAGEMENT OF HIGH ACID PRODUCING SOILS SHALL BE IN ACCORDANCE WITH THE STANDARDS. HIGH ACID PRODUCING SOILS ARE THOSE FOUND TO CONTAIN IRON SULFIDES OR HAVE A pH OF 4 OR LESS.
25. TEMPORARY AND PERMANENT SEEDING MEASURES MUST BE APPLIED ACCORDING TO THE NEW JERSEY STANDARDS, AND MULCHED WITH SALT HAY OR EQUIVALENT AND ANCHORED IN ACCORDANCE WITH THE NEW JERSEY STANDARDS (I.E. PEG AND TWINE, MULCH NETTING OR LIQUID MULCH BINDER).
26. MAXIMUM SIDE SLOPES OF ALL EXPOSED SURFACES SHALL NOT BE CONSTRUCTED STEEPER THAN 3:1 UNLESS OTHERWISE APPROVED BY THE DISTRICT.
27. DUST IS TO BE CONTROLLED BY AN APPROVED METHOD ACCORDING TO THE NEW JERSEY STANDARDS AND MAY INCLUDE WATERING WITH A SOLUTION OF CALCIUM CHLORIDE AND WATER.
28. ADJOINING PROPERTIES SHALL BE PROTECTED FROM EXCAVATION AND FILLING OPERATIONS ON THE PROPOSED SITE.
29. USE STAGED CONSTRUCTION METHODS TO MINIMIZE EXPOSED SURFACES, WHERE APPLICABLE.
30. ALL VEGETATIVE MATERIAL SHALL BE SELECTED IN ACCORDANCE WITH AMERICAN STANDARDS FOR NURSERY STOCK OF THE AMERICAN ASSOCIATION OF THE NURSERYMEN AND IN ACCORDANCE WITH THE NEW JERSEY STANDARDS.
31. NATURAL VEGETATION AND SPECIES SHALL BE RETAINED WHERE SPECIFIED ON THE LANDSCAPE PLAN.
32. THE SOIL EROSION INSPECTOR MAY REQUIRE ADDITIONAL SOIL EROSION MEASURES TO BE INSTALLED, AS DIRECTED BY THE DISTRICT INSPECTOR.

DUST CONTROL

DEFINITION
THE CONTROL OF DUST ON CONSTRUCTION SITES AND ROADS.

PURPOSE
TO PREVENT BLOWING AND MOVEMENT OF DUST FROM EXPOSED SOIL SURFACES, REDUCED ON-SITE AND OFF-SITE DAMAGE, HEALTH HAZARDS, AND IMPROVE TRAFFIC SAFETY.

CONDITION WHERE PRACTICE APPLIES
THIS PRACTICE IS APPLICABLE TO AREA SUBJECT TO DUST BLOWING AND MOVEMENT WHERE ON-SITE AND OFF-SITE DAMAGE IS LIKELY WITHOUT TREATMENT. CONSULT WITH LOCAL MUNICIPAL ORDINANCES ON ANY RESTRICTIONS.

WATER QUALITY ENHANCEMENT
SEDIMENT DEPOSITED AS "DUST" ARE OFTEN FINE COLLOIDAL MATERIAL WHICH IS EXTREMELY DIFFICULT TO REMOVE FROM WATER ONCE IT BECOMES SUSPENDED. USE OF THIS STANDARD WILL HELP TO CONTROL THE GENERATION OF DUST FROM CONSTRUCTION SITES AND SUBSEQUENT BLOWING AND DEPOSITION INTO LOCAL SURFACE WATER RESOURCES.

PLANNING CRITERIA
THE FOLLOWING METHODS SHOULD BE CONSIDERED FOR CONTROLLING DUST:

MULCHES - SEE STANDARD OF STABILIZATION WITH MULCHES ONLY, PG. 5-1.

VEGETATIVE COVER - SEE STANDARD FOR: TEMPORARY VEGETATIVE COVER, PG. 7-1, PERMANENT VEGETATIVE COVER FOR SOIL STABILIZATION, PG. 4-1, AND PERMANENT STABILIZATION WITH SOD, PG. 6-1.

SPRAY-ON ADHESIVES - ON MINERAL SOILS (NOT EFFECTIVE ON MUCK SOILS). KEEP TRAFFIC OFF THESE AREAS.

TILLAGE - TO ROUGHEN SURFACE SAND AND BRING CLODS TO THE SURFACE. THIS IS A TEMPORARY EMERGENCY MEASURE WHICH SHOULD BE USED BEFORE SOIL BLOWING STARTS. BEGIN PLOWING ON WINDWARD SIDE OF SITE. CHISEL-TYPE PLOWS SPACED ABOUT 12" APART, AND SPRING TOOTHED HARROWS ARE EXAMPLES OF EQUIPMENT WHICH MAY PRODUCE THE DESIRED EFFECT.

SPRINKLING - SITE IS SPRINKLED UNTIL THE SURFACE IS WET.

BARRIERS - SOLID BOARD FENCES, SNOW FENCES, BURLAP FENCES, CRATE WALLS, BALES OF HAY, AND SIMILAR MATERIAL CAN BE USED TO CONTROL AIR CURRENTS AND SOIL BLOWING.

CALCIUM CHLORIDE - SHALL BE IN THE FORM OF LOOSE, DRY GRANULES OR FLAKES FINE ENOUGH TO FEED THROUGH COMMONLY USED SPREADERS AT A RATE THAT WILL KEEP SURFACE MOIST BUT NOT CAUSE POLLUTION OR PLANT DAMAGE. IF USED ON STEEPER SLOPES, THEN USE OTHER PRACTICES TO PREVENT WASHING INTO STREAMS, OR ACCUMULATION AROUND PLANTS.

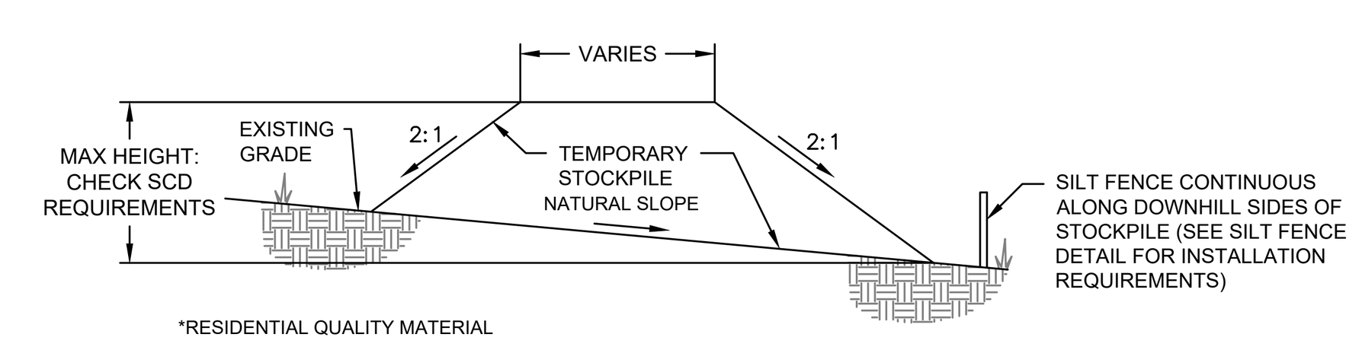
STONE - COVER SURFACE WITH CRUSHED STONE OR COARSE GRAVEL.

TABLE 16-1: DUST CONTROL MATERIALS			
MATERIAL	WATER DILUTION	TYPE OF NOZZLE	APPLY GALLONS/ACRE
ANIONIC ASPHALT EMULSION	7:1	COARSE SPRAY	1200
LATEX EMULSION	12.5:1	FINE SPRAY	235
RESIN IN WATER	4:1	FINE SPRAY	300
POLYARYLAMIDE (PAM) SPRAY ON	APPLY ACCORDING TO MANUFACTURER'S INSTRUCTIONS. MAY ALSO BE USED AS AN ADDITIVE TO SEDIMENT BASINS TO FLOCCULATE AND PRECIPITATE SUSPENDED COLLOIDS. SEE SEDIMENT BASIN STANDARD, PG. 26-1.		
POLYARYLAMIDE (PAM) DRY SPREAD			
ACIDULATED SOY BEAN SOAP STICK	NONE	COARSE SPRAY	1200

CONSTRUCTION SEQUENCE

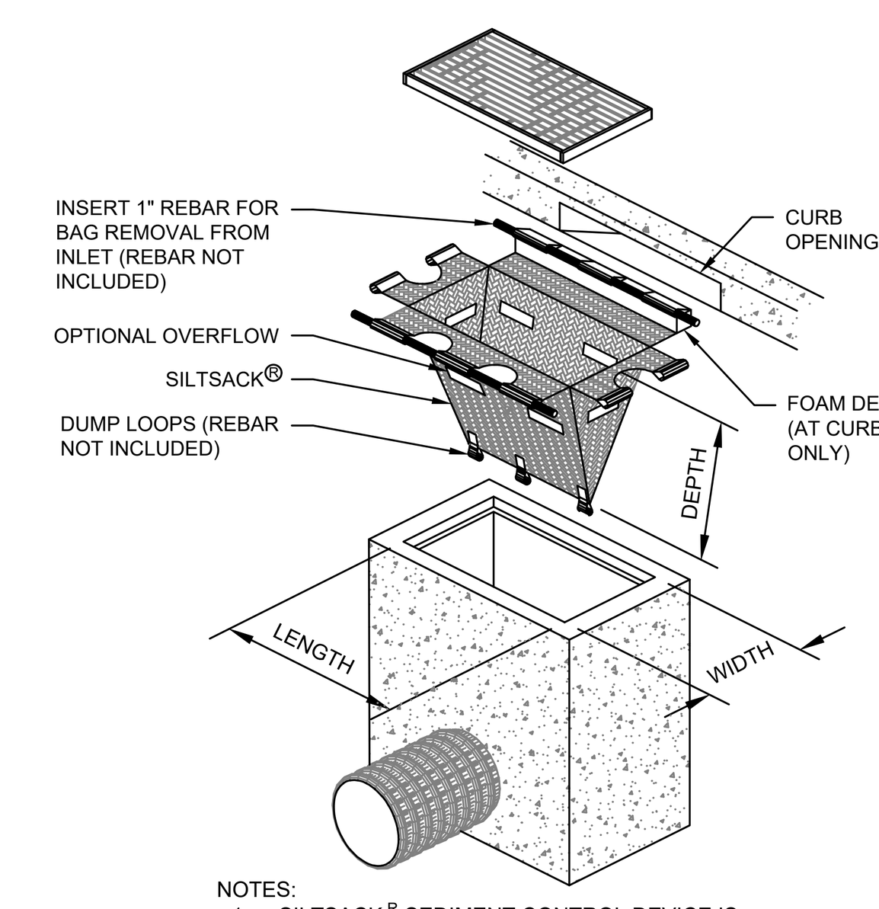
DESCRIPTION OF ACTIVITY	WEEK
1. CONTACT THE CAMDEN COUNTY SOIL CONSERVATION DISTRICT AT (856)-767-6299 A MINIMUM OF 72 HOURS PRIOR TO ANY SOIL DISTURBANCE TO ARRANGE A PRECONSTRUCTION MEETING. THE ORIGINAL CAMDEN COUNTY SOIL CONSERVATION DISTRICT CERTIFICATION AND PLANS MUST BE AVAILABLE AT THE SITE AT ALL TIMES.	-- --
2. INSTALL WESTERN PERMANENT FENCE TO ESTABLISH SECURED AREA BETWEEN SJPC AND DEMOLITION SITE.	0 TO 1
3. INSTALL CONSTRUCTION FENCING PRIOR TO THE CREATION OF THE CONSTRUCTION ENTRANCE AND INSTALL ALL SOIL EROSION AND SEDIMENT CONTROL MEASURES AS SHOWN ON PLAN.	0 TO 1
4. DEMOLISH EXISTING INFRASTRUCTURE AND UTILITIES WITHIN LIMIT OF DISTURBANCE AS INDICATED.	1 TO 5
5. CLEAN AND ROUGH GRADE DISTURBED AREAS. INSTALL FINAL COVER GRAVEL AS INDICATED.	6 TO 8
6. REMOVE ALL SEDIMENT FILTERS, ACCUMULATED SEDIMENT, AND SEDIMENT FILTER FENCES.	-- --

NOTE: SEQUENCE OF CONSTRUCTION IS APPROXIMATE AND MAY CHANGE BASED ON FIELD CONDITIONS, WEATHER, FUNDING, OR OTHER UNFORESEEN CIRCUMSTANCES. INTERIOR BUILDING CONSTRUCTION HAS NOT BEEN INCLUDED IN THE SEQUENCE.



NOTE:
1. PROVIDE TEMPORARY COVER AS SPECIFIED IN SCS NOTES.

1 TEMPORARY STOCKPILE
SCALE: NTS



NOTES:
1. SILTSACK R SEDIMENT CONTROL DEVICE IS MANUFACTURED BY TERRAFIX GEOSYNTHETICS INC. AND IS TO BE INSTALLED AND UTILIZED AS PER THE MANUFACTURER'S INSTRUCTIONS AND SPECIFICATIONS.
2. INSTALLER/CONTRACTOR TO BE WELL VERSED AND FAMILIAR WITH INSTALLATION AND MAINTENANCE OF EROSION CONTROL DEVICE.
3. SILT REMOVAL IN AND/OR AROUND INLET TO BE PERIODICALLY MAINTAINED THROUGHOUT THE COURSE OF PROJECT CONSTRUCTION.

2 "SILTSACK" INLET SEDIMENT FILTER DETAIL
SCALE: NTS

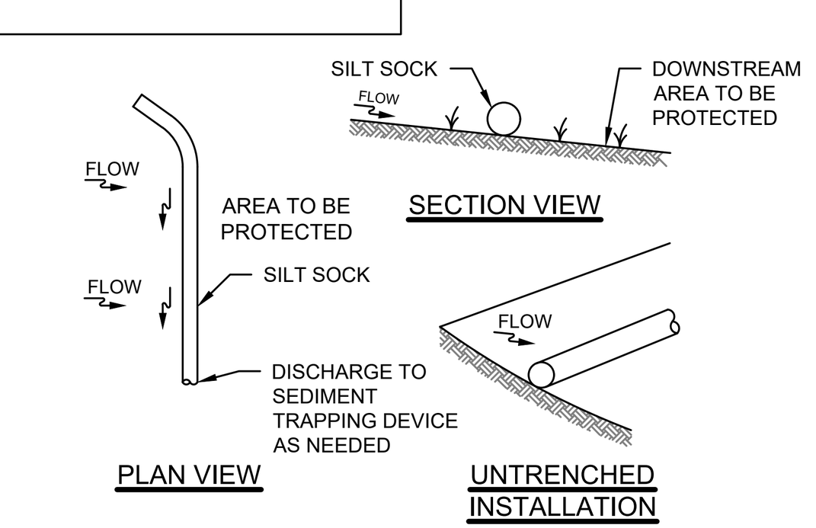
Table 2 Recommended spacing and diameter requirements

Slope %	Maximum slope length above compost filter sock in ft (m) — Diameter of compost filter sock required: 8-inch (200-mm)	12-inch (300-mm)	18-inch (450-mm)	24-inch (600-mm)
2 (or less)	300 (90)	375 (110)	500 (150)	650 (200)
5	200 (60)	250 (75)	275 (85)	325 (100)
10	100 (30)	125 (35)	150 (45)	200 (60)
15	70 (20)	85 (25)	100 (30)	160 (50)
20	50 (15)	65 (20)	70 (20)	130 (40)
25	40 (12)	50 (15)	55 (16)	100 (30)
30	30 (9)	40 (12)	45 (13)	65 (20)
35	30 (9)	40 (12)	45 (13)	55 (18)
40	30 (9)	40 (12)	45 (13)	50 (15)
45	20 (6)	25 (8)	30 (9)	40 (12)
50	20 (6)	25 (8)	30 (9)	35 (10)

If used as a biofiltration enclosure (fig. 5), cell, or ring, the compost filter sock should be placed on level ground and should not be filled beyond 50 percent of its volumetric capacity. Compost filter socks may be stacked to increase volumetric design capacity.

SILT SOCK INSTALLATION NOTES:

1. PRIOR TO INSTALLATION, CLEAR ALL OBSTRUCTIONS INCLUDING ROCKS, CLODS, AND DEBRIS GREATER THAN ONE INCH THAT MAY INTERFERE WITH PROPER AND COMPLETE GROUND CONTACT AND FUNCTION OF FILTER SOCK.
2. FILL TUBULAR CASING UNIFORMLY WITH SAND MATERIAL TO DESIRED LENGTH SUCH THAT LOGS DO NOT DEFORM.
3. INSTALL SILT SOCKS PERPENDICULAR TO THE FLOW DIRECTIONS AND PARALLEL TO CONTOUR WITH THE BEGINNING AND END OF THE INSTALLATION POINTING SLIGHTLY UP THE SLOPE, CREATING A "J" SHAPE. THE LOWER END SHALL HAVE SEDIMENT TRAPPING DEVICE INSTALLED OR STABLE OUTFALL FOR CLEAN WATER.
4. FOR UNTRENCHED INSTALLATION, ENSURE COMPLETE GROUND CONTACT.
5. WHEN MORE THAN ONE SILT SOCK IS NEEDED, OVERLAP ENDS A MINIMUM OF 12 INCHES.
6. REMOVE ACCUMULATED SEDIMENT TO MAINTAIN POSITIVE FLOW ALONG THE LENGTH OF THE SILT SOCK. UNDERMINING OR SCOUR MUST BE REPAIRED IMMEDIATELY. IF UNDERMINING OR SCOURING CONTINUES ANOTHER METHOD OF WATER HANDLING SHOULD BE CONSIDERED. SILT SOCKS WHICH ARE DAMAGED, TORN, RIPPED OR COMPRESSED OUT OF SHAPE NEED TO BE REPAIRED OR REPLACED.
7. SILT SOCK SHALL BE A MINIMUM OF 6" DIAMETER OR AS SPECIFIED BY THE SOIL CONSERVATION DISTRICT.



4 SILT SOCK DETAIL
SCALE: NTS

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

DRAFT

FILE NAME: P:\03690\0001\DWGs\C-Civil\Plotdwgs\03690.0001_551St_SCD_Plan.dwg\C-02_SCD LAST EDIT: 06/23/2021 - 10:34:12 AM LOGIN: krutherford@

REV. / ISSUE	DATE	DESCRIPTION

CONSULTANT

CONSULTANT

ORIENTATION / KEY PLAN

PS&S
PAULUS, SOKOLOWSKI AND SARTOR, LLC.
1909 ROUTE 70 EAST
SUITE 307
CHERRY HILL, NEW JERSEY 08003
PHONE: (856) 335-6000
CERTIFICATE OF AUTHORIZATION NO. 24GA28032700

KYLE D. RUTHERFORD, P.E.
PROFESSIONAL ENGINEER
N.J. LIC. NO. GE05276000

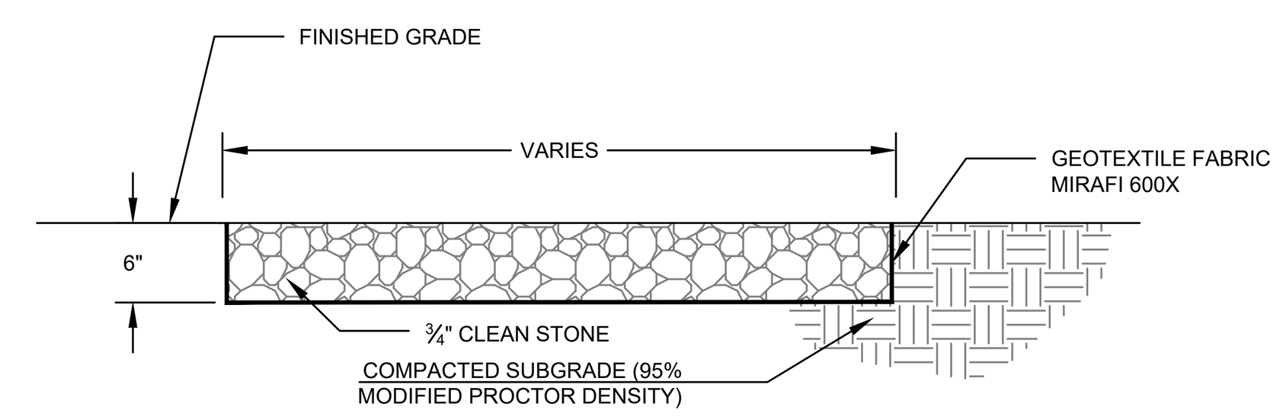
SIGNATURE DATE

CLIENT
SOUTH JERSEY PORT CORPORATION

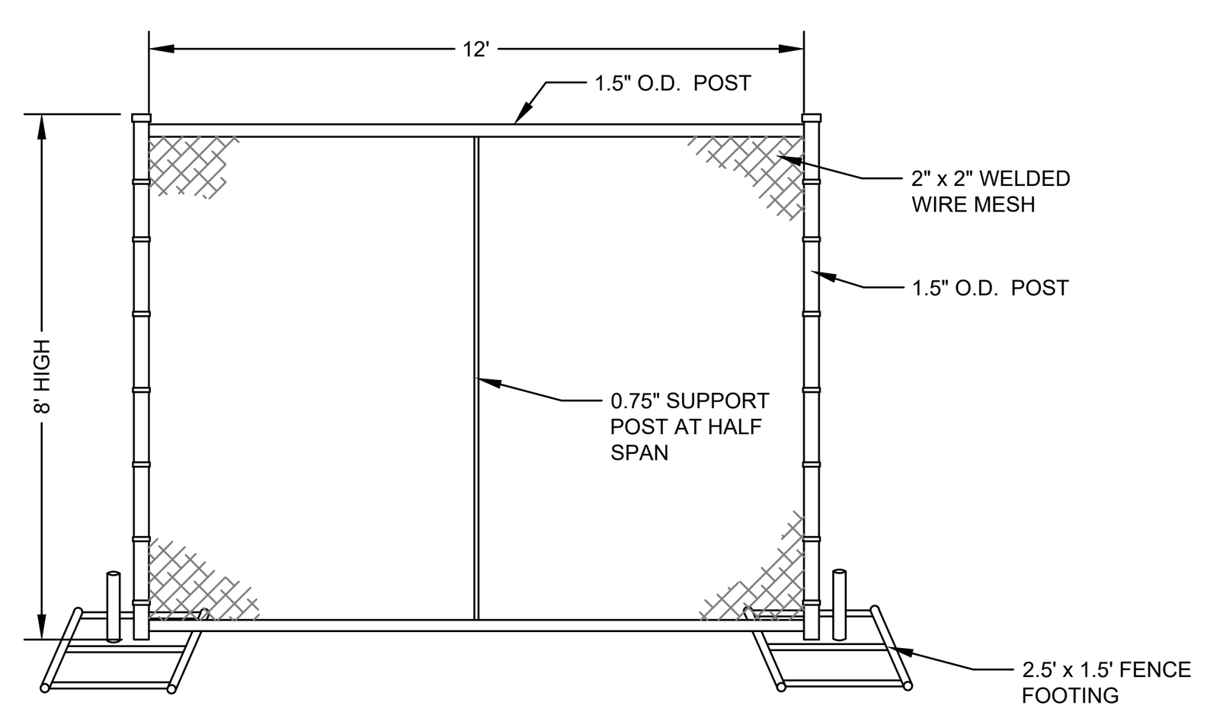
PROJECT
551 S. SECOND STREET DEMOLITION
BLOCK 157, LOT 11.02
CITY OF CAMDEN, CAMDEN COUNTY, NEW JERSEY

SHEET TITLE
SOIL EROSION AND SEDIMENT CONTROL PLAN, NOTES AND DETIALS

PROJECT NO.: 03690.0001
DATE: 06/11/2021
DRAWN BY: BRM
CHECKED BY: KDR
SCALE: 1" = 20'
SHEET 2 OF 3
SHEET NO.
C-02

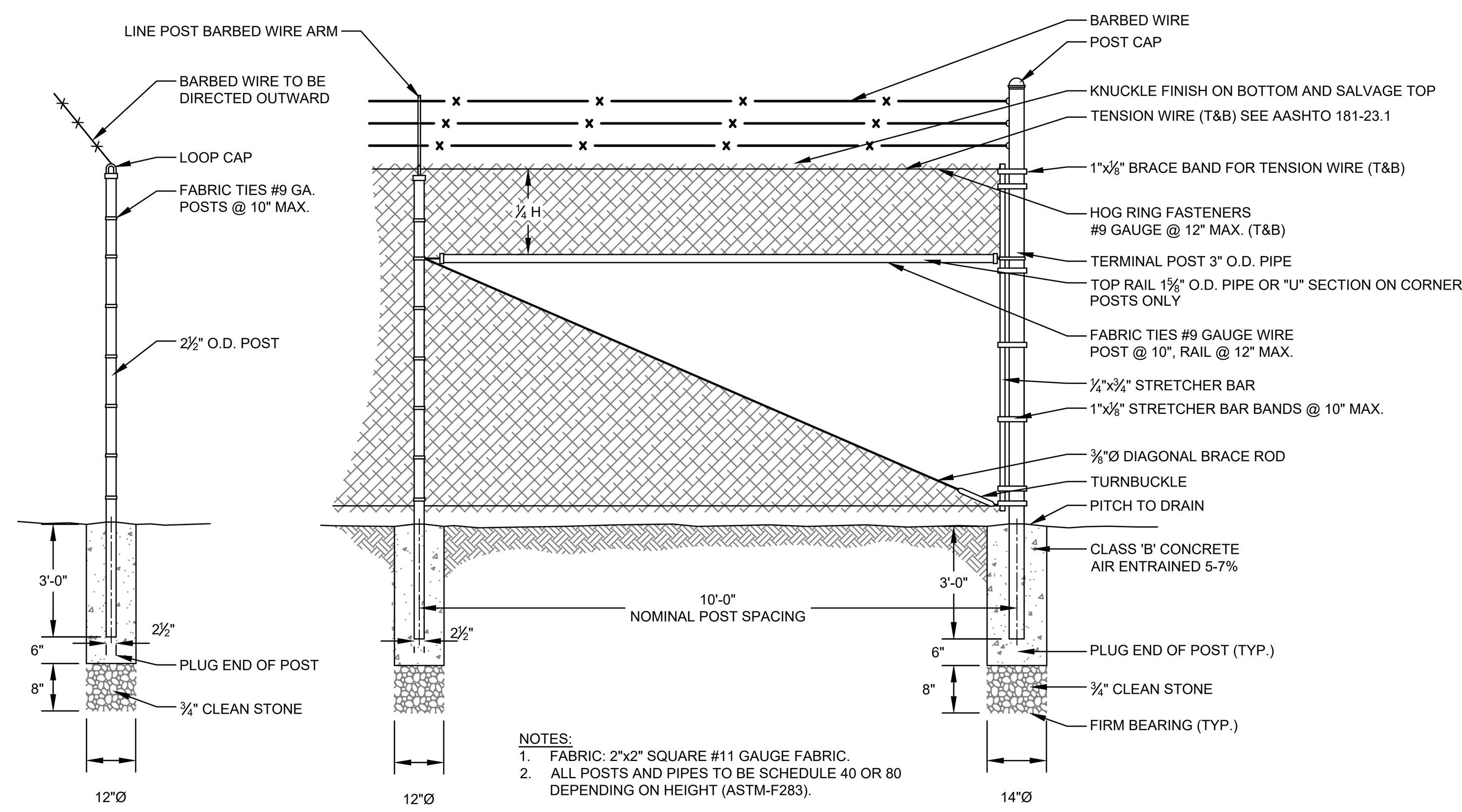


3 STONE FINAL COVER DETAIL
SCALE: NTS



NOTES:
1. TEMPORARY CHAIN LINK FENCE PANELS SHALL CONFORM TO ASTM-A392-06.
2. ALL FOOTINGS SHOULD BE WEIGHTED DOWN WITH SANDBAGS TO SECURE FENCE IN PLACE.

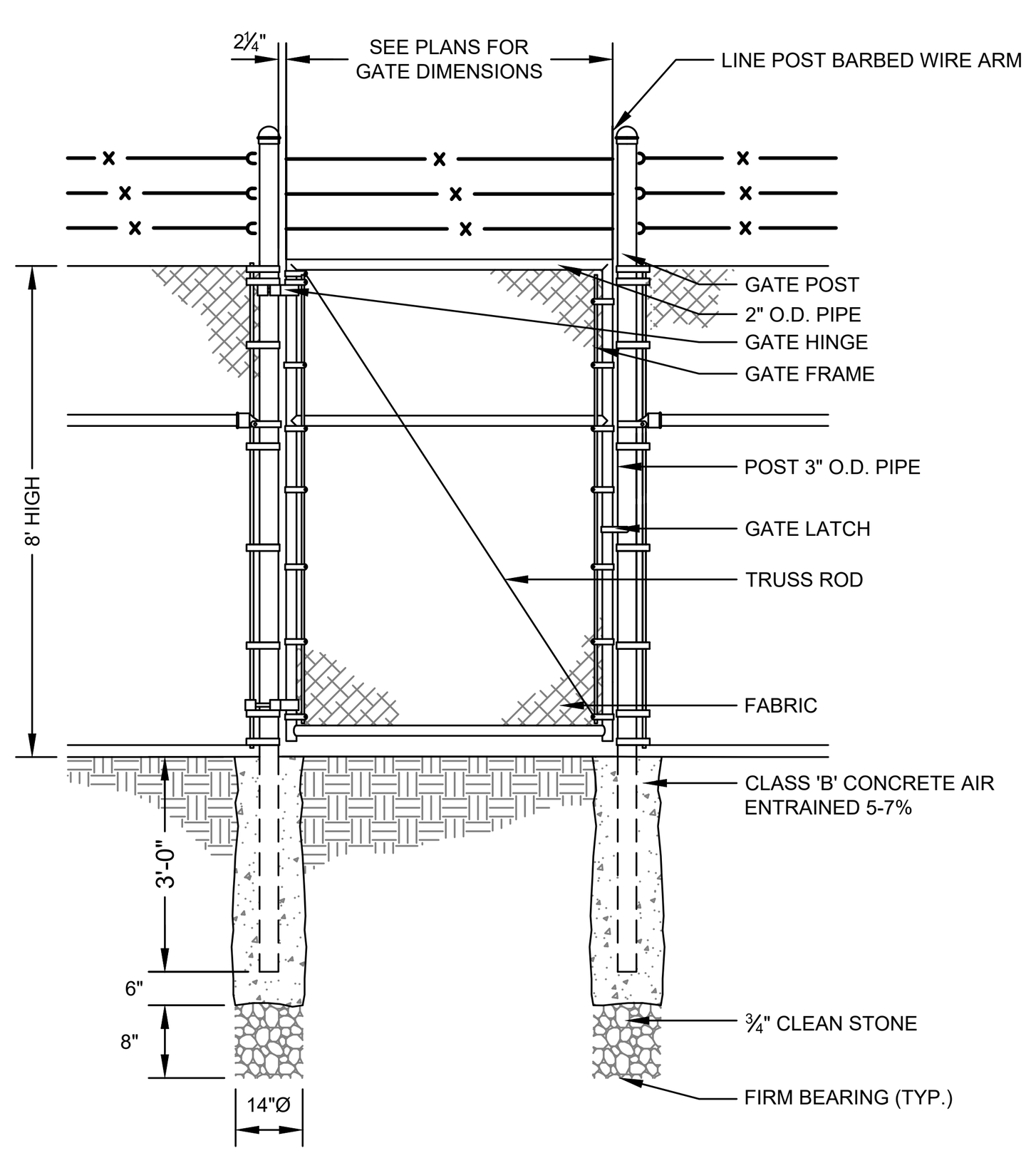
1 CONSTRUCTION FENCE
SCALE: NTS



LINE POST BARBED WIRE ARM
BARBED WIRE TO BE DIRECTED OUTWARD
LOOP CAP
FABRIC TIES #9 GA. POSTS @ 10" MAX.
2⅜" O.D. POST
PLUG END OF POST
¾" CLEAN STONE
BARBED WIRE
POST CAP
KNUCKLE FINISH ON BOTTOM AND SALVAGE TOP
TENSION WIRE (T&B) SEE AASHTO 181-23.1
1"x⅛" BRACE BAND FOR TENSION WIRE (T&B)
HOG RING FASTENERS #9 GAUGE @ 12" MAX. (T&B)
TERMINAL POST 3" O.D. PIPE
TOP RAIL 1⅝" O.D. PIPE OR "U" SECTION ON CORNER POSTS ONLY
FABRIC TIES #9 GAUGE WIRE POST @ 10", RAIL @ 12" MAX.
¾"x⅜" STRETCHER BAR
1"x⅛" STRETCHER BAR BANDS @ 10" MAX.
⅜"Ø DIAGONAL BRACE ROD
TURNBUCKLE
PITCH TO DRAIN
CLASS 'B' CONCRETE AIR ENTRAINED 5-7%
10'-0" NOMINAL POST SPACING
PLUG END OF POST (TYP.)
¾" CLEAN STONE
FIRM BEARING (TYP.)
12"Ø
12"Ø
14"Ø

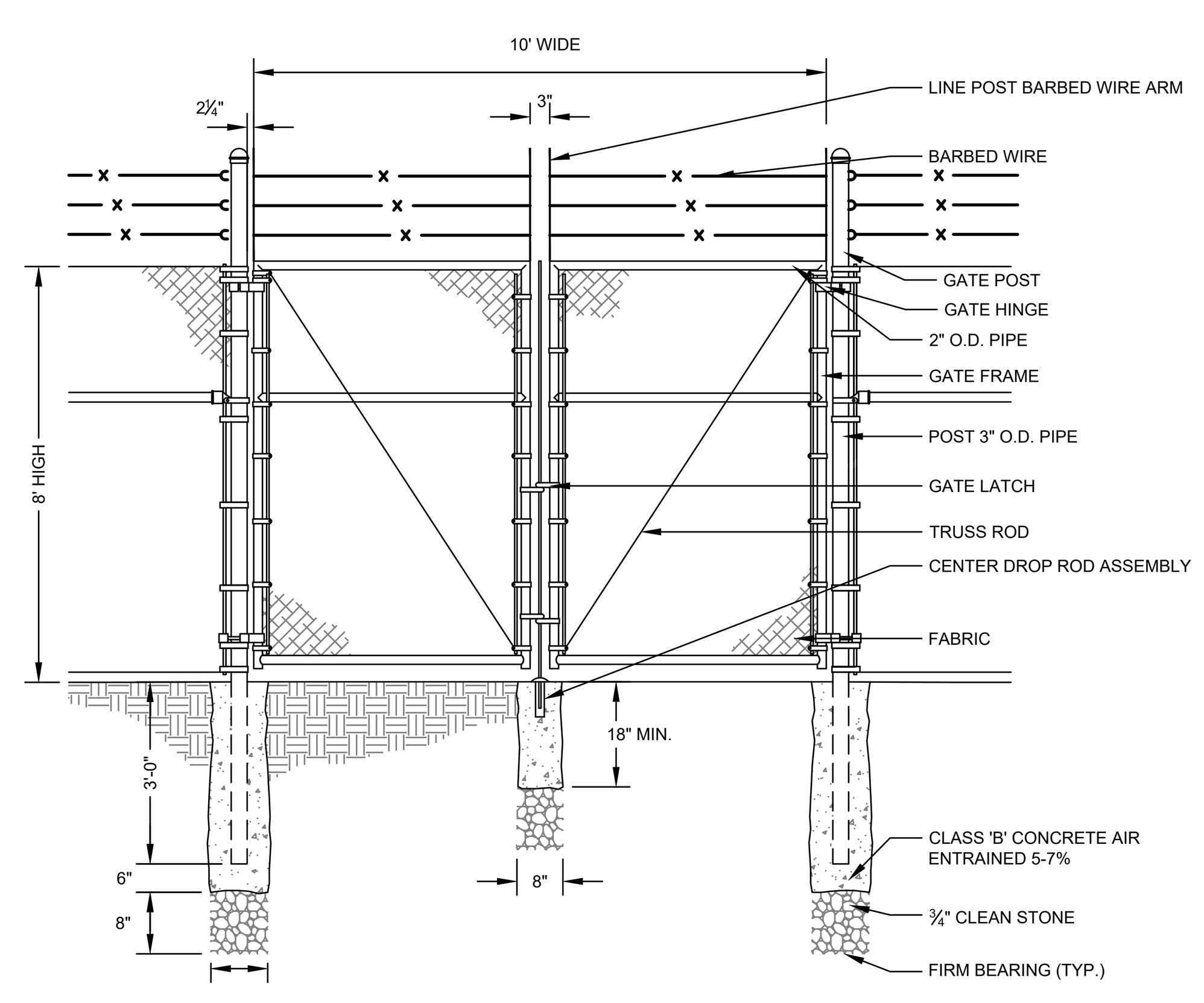
NOTES:
1. FABRIC: 2"x2" SQUARE #11 GAUGE FABRIC.
2. ALL POSTS AND PIPES TO BE SCHEDULE 40 OR 80 DEPENDING ON HEIGHT (ASTM-F283).

8' HIGH CHAIN LINK FENCE
4 WITH 3 STRANDS OF BARBED WIRE
SCALE: NTS



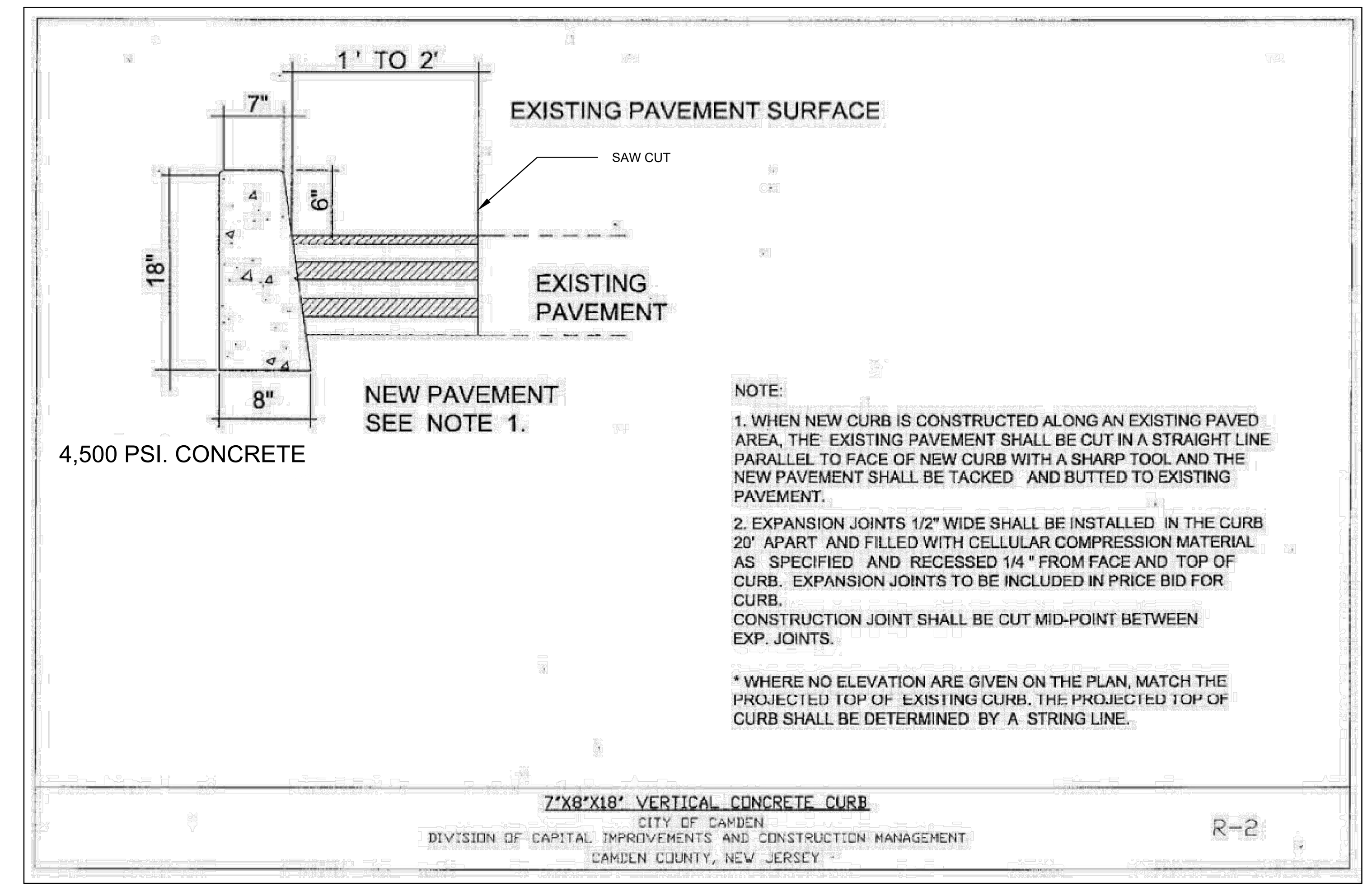
NOTES:
1. FABRIC: 2"x2" SQUARE #11 GAUGE FABRIC.
2. ALL POSTS AND PIPES TO BE SCHEDULE 40 OR 80 DEPENDING ON HEIGHT (ASTM-F283).

8' HIGH SINGLE SWING GATE
2 WITH 3 STRANDS OF BARBED WIRE
SCALE: NTS

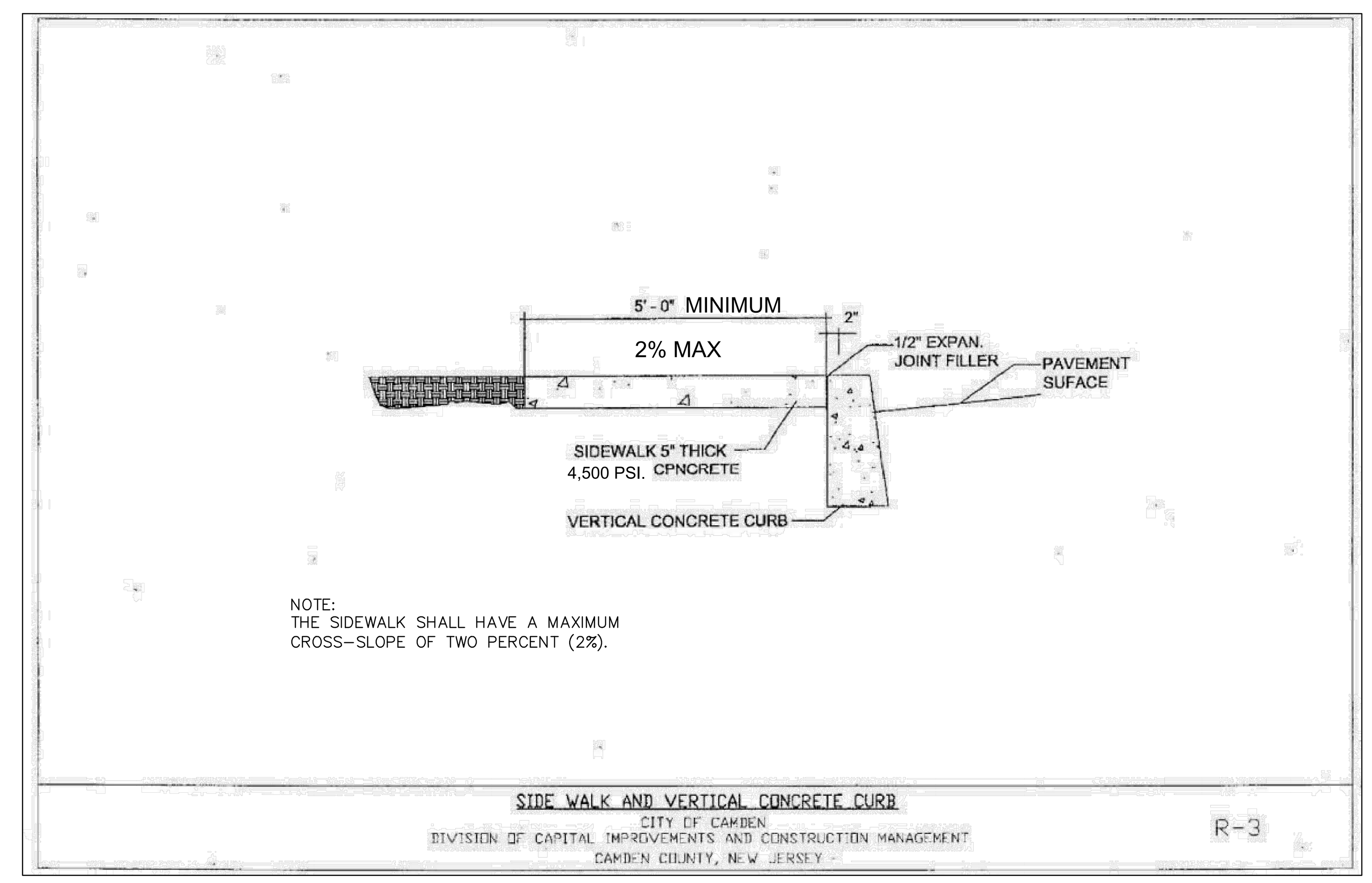


NOTES:
1. FABRIC: 2"x2" SQUARE #11 GAUGE FABRIC.
2. ALL POSTS AND PIPES TO BE SCHEDULE 40 OR 80 DEPENDING ON HEIGHT (ASTM-F283).

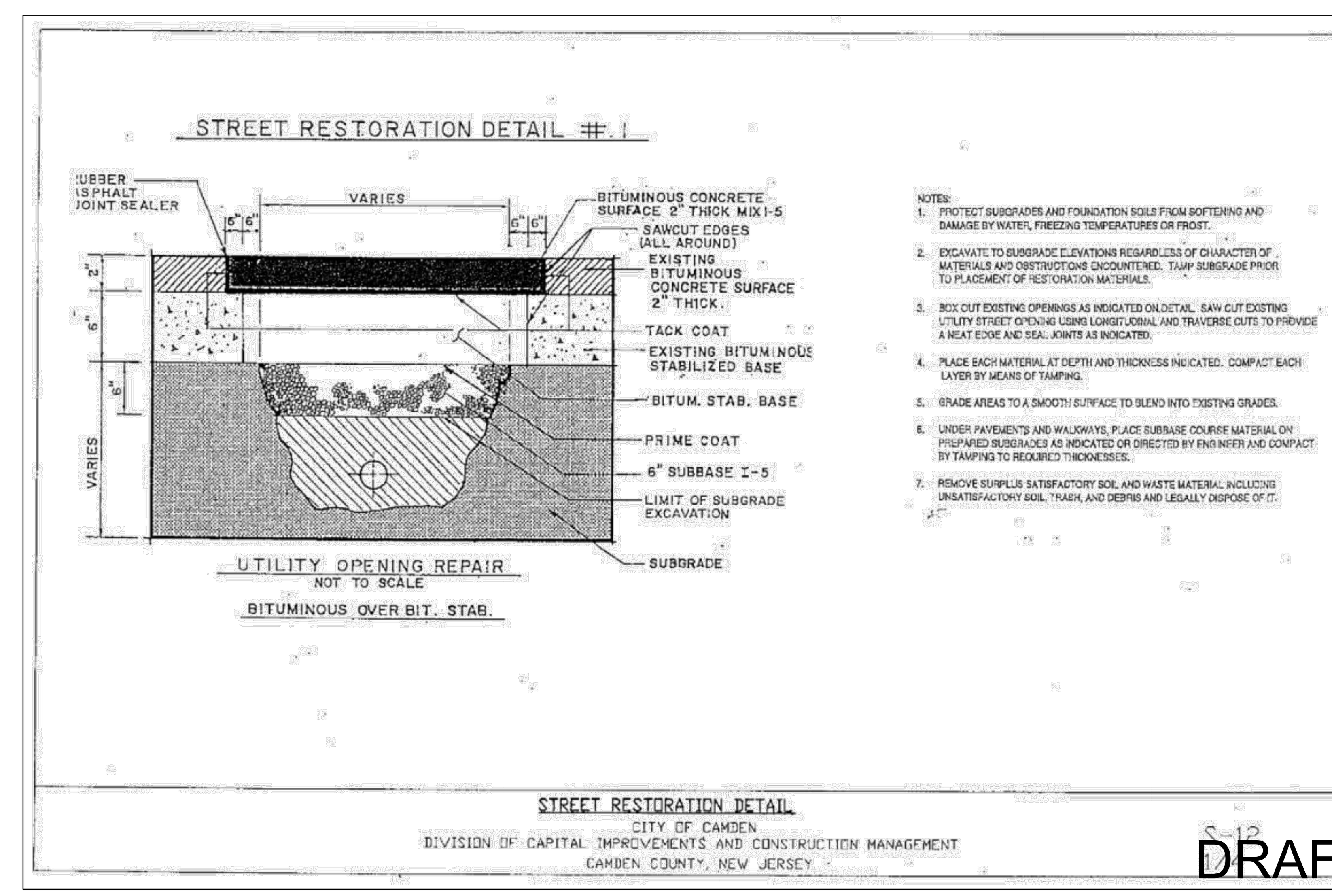
8' HIGH DOUBLE SWING GATE
5 WITH 3 STRANDS OF BARBED WIRE
SCALE: NTS



1' TO 2'
7"
EXISTING PAVEMENT SURFACE
SAW CUT
6"
18"
EXISTING PAVEMENT
8"
NEW PAVEMENT SEE NOTE 1.
4,500 PSI. CONCRETE
NOTE:
1. WHEN NEW CURB IS CONSTRUCTED ALONG AN EXISTING PAVED AREA, THE EXISTING PAVEMENT SHALL BE CUT IN A STRAIGHT LINE PARALLEL TO FACE OF NEW CURB WITH A SHARP TOOL AND THE NEW PAVEMENT SHALL BE TACKED AND BUTTED TO EXISTING PAVEMENT.
2. EXPANSION JOINTS 1/2" WIDE SHALL BE INSTALLED IN THE CURB 20' APART AND FILLED WITH CELLULAR COMPRESSION MATERIAL AS SPECIFIED AND RECESSED 1/4" FROM FACE AND TOP OF CURB. EXPANSION JOINTS TO BE INCLUDED IN PRICE BID FOR CURB.
CONSTRUCTION JOINT SHALL BE CUT MID-POINT BETWEEN EXP. JOINTS.
* WHERE NO ELEVATION ARE GIVEN ON THE PLAN, MATCH THE PROJECTED TOP OF EXISTING CURB. THE PROJECTED TOP OF CURB SHALL BE DETERMINED BY A STRING LINE.
7"X8"X18" VERTICAL CONCRETE CURB
CITY OF CAMDEN
DIVISION OF CAPITAL IMPROVEMENTS AND CONSTRUCTION MANAGEMENT
CAMDEN COUNTY, NEW JERSEY
R-2



5'-0" MINIMUM
2% MAX
2"
1/2" EXPAN. JOINT FILLER
PAVEMENT SUFACE
SIDEWALK 5" THICK 4,500 PSI. CONCRETE
VERTICAL CONCRETE CURB
NOTE:
THE SIDEWALK SHALL HAVE A MAXIMUM CROSS-SLOPE OF TWO PERCENT (2%).
SIDE WALK AND VERTICAL CONCRETE CURB
CITY OF CAMDEN
DIVISION OF CAPITAL IMPROVEMENTS AND CONSTRUCTION MANAGEMENT
CAMDEN COUNTY, NEW JERSEY
R-3



STREET RESTORATION DETAIL #1
RUBBER ASPHALT JOINT SEALER
VARIES
BITUMINOUS CONCRETE SURFACE 2" THICK MIX I-5
SAWCUT EDGES (ALL AROUND)
EXISTING BITUMINOUS CONCRETE SURFACE 2" THICK.
TACK COAT
EXISTING BITUMINOUS STABILIZED BASE
BITUM. STAB. BASE
PRIME COAT
6" SUBBASE I-5
LIMIT OF SUBGRADE EXCAVATION
SUBGRADE
VARIES
UTILITY OPENING REPAIR
NOT TO SCALE
BITUMINOUS OVER BIT. STAB.
STREET RESTORATION DETAIL
CITY OF CAMDEN
DIVISION OF CAPITAL IMPROVEMENTS AND CONSTRUCTION MANAGEMENT
CAMDEN COUNTY, NEW JERSEY

DRAFT

REV. / ISSUE	DATE	DESCRIPTION

CONSULTANT

CONSULTANT

ORIENTATION / KEY PLAN

PAULUS, SOKOLOWSKI AND SARTOR, LLC.
1909 ROUTE 70 EAST
SUITE 307
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PHONE: (856) 335-6000
CERTIFICATE OF AUTHORIZATION NO. 24GA28032700

KYLE D. RUTHERFORD, P.E.
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N.J. LIC. NO. GE05276000

SIGNATURE DATE

CLIENT
SOUTH JERSEY PORT CORPORATION

PROJECT
551 S. SECOND STREET
DEMOLITION PLAN
BLOCK 157, LOT 11.02
CITY OF CAMDEN, CAMDEN COUNTY, NEW JERSEY

SHEET TITLE
CONSTRUCTION DETAILS

PROJECT NO.:	03690.0001
DATE:	06/11/2021
DRAWN BY:	SM/BRM
CHECKED BY:	KDR
SCALE:	N.T.S.
SHEET 3 OF 3	

SHEET NO.
C-03

Appendix C: Pre-Demolition Environmental Assessment Report

PRE-DEMOLITION ENVIRONMENTAL ASSESSMENT REPORT

INVESTIGATION FOR**:**	Michael Cohen Paulus, Sokolowski & Sartor, LLC 1909 Route 70 East Suite 307 Cherry Hill, NJ 08003
SITE INVESTIGATED:	SJPC Warehouse Building 551 South Second Street Camden, NJ 08103
ASSESSMENT BY:	Omega Environmental Services, Inc. 280 Huyler Street South Hackensack, NJ 07606
INVESTIGATION CONDUCTED:	March 4, 2021
DATE OF REPORT:	April 5, 2021 (Amended April 16, 2021)
REPORT PREPARED BY:	Michelle DePippa
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(Omega Project # 21-1074)

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EXECUTIVE SUMMARY:

Omega Environmental Services was retained by Paulus, Sokolowski & Sartor (PS&S), LLC to conduct a hazardous/regulated material investigation of the South Jersey Port Corporation (SJPC) warehouse building at 551 South Second Street, Camden, NJ 08103.

The inspection included a visual assessment, and representative sampling/analysis of suspect Asbestos Containing Materials (ACM), Lead-Based Paint (LBP), and PCBs (in caulking). This inspection also included a visual inspection for other possible suspect PCB-containing materials, mercury-containing materials, hazardous material storage, and other areas of concern.

A few items of concern were noted, as summarized below, and delineated further in this report.

Preparation of an Asbestos Abatement Bid Specification is recommended since asbestos abatement has to be coordinated with demolition.

Site Description:

The commercial building is structurally compromised (collapsing).

Previous Survey and Decontamination Work:

No documentation of any previous survey work performed in the subject area was provided.

Summary of Findings:

The following summarizes the hazardous or regulated materials identified:

Camden Demo Project, NJ Pre-Renovation Hazardous Material Summary Warehouse at 551 South Second Street, Camden, NJ 08103				
Parameter Investigated	**Location**	**Regulated Material Delineated**	**Estimated Quantity**	**Recommended Action**
Asbestos (ACM)	(1st Floor) – 1st Office	Floor Tile	Unquantified*	-Abate/remove by licensed asbestos Contractor. -Selective demolition required to expose all materials *Due to very limited access in/on the partially collapsed structure and the presence of co-mingled asbestos and demolition debris, a coordinated abatement demolition SOW will be required to proceed.
	(1st Floor) – T.O. Side	Glazing	Unquantified*	
	(1st Floor) – Loose on the Floor	Flashing Debris	Unquantified*	
	-	Additional Inaccessible ACM	TBD	
Lead Based Paint (LBP)	Open Area 1st Floor – Wall (Brick)	Brick	Nine (9)	Conduct demolition activities in accordance with OSHA *Lead in Construction Standard*
	Open Area 1st Floor – Wall (Cinderblock)	Cinderblock	Fifteen (15)	
	Open Area 1st Floor – Window Frame (Cinderblock)	Cinderblock	Four (4)	
	Open Area 1st Floor – Window Frame (Wood)	Wood	Two (2)	
	Open Area 1st Floor – Vertical Pipe (Metal)	Metal	One (1)	
	Open Area 1st Floor – Wall (Wood)	Wood	One (1)	
	Open Area 1st Floor – Door (Wood)	Wood	Two (2)	
	Open Area 1st Floor – Door Frame (Wood)	Wood	Two (2)	
	Open Area 1st Floor – Door (Metal)	Metal	Two (2)	
	Open Area 1st Floor – Wall (Plaster)	Plaster	Two (2)	
	Open Area 1st Floor – Door (Cinderblock)	Cinderblock	One (1)	
	Open Area 1st Floor – Room (Metal)	Metal	Three (3)	
	Open Area 1st Floor – Fire Escape Stairs (Metal)	Metal	One (1)	

Camden Demo Project, NJ Pre-Renovation Hazardous Material Summary Warehouse at 551 South Second Street, Camden, NJ 08103			
Parameter Investigated	**Regulated Material Delineated**	**Estimated Quantity**	**Recommended Action**
PCBs	Fluorescent light ballasts	Est. 30 Ballasts mixed in with demo debris	Remove from fixture and dispose of as PCB Bulk Product Waste segregated during demolition.
	Transformers	No suspect PCB transformers were noted.	None
	Caulking	Trace levels (< 50 ppm) in 3 types sampled. Relatively minimal quantities.	Verify that the disposal facility will accept materials with trace levels of PCBs; assume other types of caulk are TSCA PCB Bulk Product Waste. unless tested.
Mercury	Fluorescent light bulbs	Est. 60 Bulbs mixed in with demo debris. Most are expected to be broken due to roof collapse.	Remove and dispose of any intact bulbs as mercury-containing universal waste during demolition.
	Thermostats, timers, misc.	None identified but up to 6 suspected near boilers (basement inaccessible).	Remove and dispose of as mercury-containing equipment during demolition.
	High-Intensity Floodlights	Approx. 6 bulbs	Remove and dispose of as Universal Waste prior to demolition.
Chemical Storage/tanks	Drums, tanks or significant chemical storage.	Three 55-gallon drums identified in yard (antifreeze, degreaser, and unlabeled).	Remove and dispose of prior to demolition
	USTs/ASTs	None active tanks were identified. One out-of-service AST is located in the yard.	None
	Misc. paints, solvents, adhesives, small misc. fluids	De minimus quantities.	Remove and dispose of prior to demolition

Camden Demo Project, NJ Pre-Renovation Hazardous Material Summary Warehouse at 551 South Second Street, Camden, NJ 08103			
Parameter Investigated	**Regulated Material Delineated**	**Estimated Quantity**	**Recommended Action**
	Staining	No significant staining was observed inside the structure. Small heavy equipment (forklifts) leaked fluids are expected in the yard.	Remove heavy equipment and inspect soils.
	Batteries	None observed	None
Biological Concerns (mold, bird feces, sewage)	Water damage/mold growth	None observed	None
Other/Miscellaneous	Boiler Systems	Two identified, but no treatment chemicals are suspected.	None
	Refrigerant Systems	None identified.	None
	Compressor Systems	None identified	None

Total Estimated Abatement Cost for Project:

- Estimated demolition and sorting of ACM materials cost: $260 – 300 thousand for union rate, $210 – 240 thousand for NON-union rate.

1 ASBESTOS SURVEY:

1.1 Summary:

Omega Environmental Services, Inc. (Omega) has been retained by Paulus, Sokolowski & Sartor, LLC to conduct an asbestos survey of 551 South Second Street, Camden, NJ 08103 to confirm the presence/absence of accessible asbestos containing materials (ACM).

Notes:

- Assumed ACM roofing material and siding at the top of the building, no access due to poor building condition.

1.1.1 ACM identified:

The following materials were classified as regulated ACM (asbestos at concentrations above 1%):

LOCATION	MATERIAL DESCRIPTION	ASSESSED CONDITION	ESTIMATED QUANTITY* (square/linear feet)
1st Floor – 1st Office	Floor Tile	Severely Damaged	Unquantified
1st Floor – T.O. Side	Glazing	Severely Damaged	Unquantified
1st Floor – Loose on the Floor	Flashing Debris	Severely Damaged	Unquantified
*Since asbestos materials potentially continue through adjoining areas and/or layers, final asbestos abatement quantitates scope have to be determined in the field when project details are confirmed.			

1.2 Scope of Work:

Omega conducted a pre-demolition asbestos survey of 551 South Second Street, Camden, 08103 which is scheduled for demolition and/or renovation. Purpose of this investigation was that asbestos containing materials (ACM) could be identified and abated prior to the onset of potential renovation activities as per *EPA NESHAPS*, *OSHA, and NJ DOL* requirements.

1.2.1 Materials Tested:

Considering the age of the building, it was determined that the following **suspect** asbestos-containing materials (ACM) were observed, and were subsequently **tested** for presence/absence of asbestos:

- Roofing Debris
- Plaster Brown Coat
- Mortar
- Glazing
- Wall Panel
- Plaster White Coat
- Floor Tile
- Brick
- Insulation (Wall)
- Caulking
- Interior Brick
- Interior CMU
- Flashing Debris
- CMU Plaster
- Electric Liner
- Wall Insulation
- Brick Mortar
- CMU Mortar

- Wire Wrapping
- Roof Underlayment
- Electric Panel Holder

Positive ACM materials above are highlighted.

1.2.2 Non-ACM:

The following materials were sampled, analyzed and identified to be **non-ACM**, with asbestos either not detected or detected in concentrations of less than one percent (1%):

- Roofing Debris
- Plaster Brown Coat
- Mortar
- Wall Panel
- Plaster White Coat
- Brick
- Insulation (Wall)
- Caulking
- Interior Brick
- Interior CMU
- CMU Plaster
- Electric Liner
- Wall Insulation
- Brick Mortar
- CMU Mortar
- Wire Wrapping
- Roof Underlayment
- Electric Panel Holder

1.3 Sampling Methodology:

The information that is contained in this report is based upon the following:

- Information which was provided by the building representatives interviewed.
- A visual inspection of the designated building areas supported by a representative sampling required to comply with EPA protocol for asbestos building surveys.
- Laboratory analysis of bulk samples of various materials collected from representative building areas that were suspected to contain asbestos. An accredited laboratory using PLM and TEM/NOB analysis methods performed the analysis.

The asbestos survey was conducted on March 4, 2021, by accredited USEPA AHERA Asbestos Inspectors. The bulk samples, which were representative of suspect ACM observed and are required by the USEPA, were collected as necessary. Multiple samples of each homogeneous material were collected and analyzed by each discernible layer. According to USEPA, a building material with an asbestos concentration greater than one percent (>1%) is considered to be ACM.

Bulk samples were submitted to ELAP accredited Laboratory Testing Services / Accreditation # 10955 and Omega Laboratories/accreditation # 10504 utilizing sealed chain-of-custody procedures.

1.4 Unknown Variables/Areas Not Accessible for Sampling:

Inaccessible Areas

- Roofing material and siding at top of the building.

1.5 Review of Previous Asbestos Surveys, Renovations or Abatement Work:

Not available for review.

1.6 Sampling Limitations/Conditions:

The following limitations/exclusions apply:

1. Asbestos bulk sampling report should not be used as sole reference source to determine Contractor scope of work – additional field coordination required in order to generate "Abatement Work Plan".
2. If scope of renovation changes, and/or walls/ceilings/chases/flooring opened, then additional asbestos bulk sampling may be required at a later date.
3. All sampling is representative in nature and does not reflect every square inch of material.
4. Findings are representative of site conditions on the day of investigation.
5. Subject survey conducted according to published regulations in effect on survey date.

1.7 ACM Conclusions and Recommendations

Conclusions:

1. ACM has been identified in the form of floor tile, glazing, and flashing debris.
2. This survey was based on visual observations of accessible interior/exterior areas of the subject building. Omega's inspection team performed limited intrusive/invasive inspections at random locations in order to ascertain presence/absence of ACM that may be concealed within pipe chases, in wall cavities and above ceiling plenums.
3. Asbestos abatement activities must be conducted in accordance with NJ DOL Regulations, and other applicable federal, state and local requirements governing removal and disposal of regulated ACM utilizing licensed workers.

Recommendations:

- **Due to existing conditions of the building, demolition should occur with ground-level sorting of ACM materials.**
    - **As an alternative, all materials may be classified as ACM for hauling and disposal purposes.**
- **Dust control to protect neighboring surroundings and downwind properties is a major concern during demolition. During all onsite work activities, Contractor needs to have water spray and/or approved EPA safe foam in use during material handling with control of run-off and storm drain protection.**
- **Any building material that is not listed in this report and/or tested must be assumed to be ACM and treated as ACM until confirmed otherwise via laboratory testing.**

2 LEAD BASED PAINT (LBP):

2.1 XRF Testing:

2.1.1 XRF Summary:

On March 4, 2021, Omega Environmental Services Inc. (Omega) conducted a lead-based paint screen survey using XRF (x-ray fluorescence). Representative painted building and site components were classified as having lead-based (LBP) or non-LBP present. The inspection was intended for pre-demolition survey purposes only, and not intended to follow USEPA HUD protocol, and was not designed for certification or occupancy purposes.

The presence of LBP in the buildings indicates that the demolition Contractor should follow OSHA *Lead in Construction Standard* (LCS). LBP on metal components that are to be torch cut in relation to demolition should be abated in the area of the cut points prior to cutting. Other materials that may have LBP do not require special treatment. Intact LBP coated components may be disposed of intact as normal construction debris contingent upon acceptable representative TCLP lead test results.

2.1.2 XRF Sampling Methodology:

Omega performed XRF screening for lead within the subject building using a Niton XLp 300A Analyzer. The inspection was conducted by Darren Slack, an EPA/NJ Lead Inspector/Risk Assessor.

The certified Lead Inspector/Risk Assessor performed a lead based paint (LBP) inspection of representative accessible building areas so that presence/absence of LBP can be verified for the subject building in areas which is expected to be demolished to grade.

2.1.3 XRF Clearance Criteria:

The USEPA defines Lead Based Paint as paint having a lead level equal to or exceeding 1.0 mg/cm^2.

2.1.4 XRF Results Summary:

The XRF results section of this report provides a listing of all the readings collected during the inspection, organized by building, component, and type of material. The positive readings, if any, are highlighted and include those readings that were at or above the action level 1.0 mg/cm^2.

The following components **were found to be covered with lead containing paint/primer**:

Location	Component	Type of Material	Quantity of Positive LBP Readings
Open Area 1st Floor	Wall	Brick	9
	Wall	Cinderblock	15
	Window Frame	Cinderblock	4
	Window Frame	Wood	2
	Vertical Pipe	Metal	1
	Wall	Wood	1
	Door	Wood	2
	Door Frame	Wood	2
	Door	Metal	2
	Wall	Plaster	2
	Door	Cinderblock	1
	Room	Metal	3
	Fire Escape Stairs	Metal	1
** Additional LBP/primer is likely to be identified on steel structures and or concealed components.			

LBP ***was not*** identified on the following components:

Location	Component	Type of Material	Quantity of Non-LBP Results
Open Area 1st Floor	Wall	Brick	5
	Window Frame	Cinderblock	2
	Vertical Pipe	Metal	1
	Wall	Wood	2
	Wall	Cinderblock	9
	Wall	Plaster	1
	Floor	Concrete	2
	Stair	Wood	1
	Staircase Railing	Wood	1
	Electrical Conduit	Metal	2
	Fire Escape Stairs	Metal	6

See *Appendix Table C1* for all XRF reading collected and specific location of each.

NOTE: Lead Based Paint (LBP) via XRF testing is defined as paint having lead at or above 1 mg/cm^2. However, OSHA *Lead in Construction Standard* applies to substrates coated with paint having *any detectable amount of lead.*

2.2 LBP Findings:

The USEPA defines Lead Based Paint as paint having a lead level equal to or exceeding 1.0 m/cm^2.

2.3 XRF Recommendations:

- **Remove/impact LBP components in accordance with OSHA Lead in Construction Standard.**

3 PCBs:

3.1 Fluorescent Light Ballasts:

Fluorescent light fixtures and associated ballasts historically have contained Polychlorinated Biphenyls (PCBs). Normally, light ballasts are assumed to contain PCBs unless specifically labeled as "non-PCB".

Light fixtures are as follows:

Approximately six fixtures were noted in the accessible ground floor warehouse space, with only 2 or 3 intact bulbs. Office spaces on the 1st, 2nd, and 3rd floors were partially collapsed and inaccessible for a full inspection.

Based on the floor area, approximately 30 fixtures are expected to have been present. Many of these may be mixed in with debris from building collapse, with broken bulbs.

Any fixtures identified during cleanup/demolition should be inspected for potential PCB light ballasts.

Ballasts labeled as no PCBs may be disposed of as normal demolition debris. An inspection of each ballast would be required. Alternately, all ballasts may be assumed to contain PCBs and disposed of as PCB bulk product waste.

3.2 Transformers:

No suspected fluid-cooled transformers were noted. However, the basement was inaccessible for a full inspection.

3.3 Caulking:

Caulking is present in the form of window caulking/glazing. However, due to the building condition (partially collapsed), a detailed inspection of the 2nd and 3rd floor windows was not possible.

Total PCBs in the table below consists of the following:
Aroclor 1016
Aroclor 1221
Aroclor 1232
Aroclor 1242
Aroclor 1248
Aroclor 1254
Aroclor 1260

Identified caulking consists of the following:

Sample #	Location/ Description	Est. Quan.	Analysis	Result (mg/kg)	Limit [1]
1074-P1	Interior window glazing	2 windows	PCBs	7.14	50 ppm
1074-P2	Perimeter of window covers	2 windows	PCBs	1.2	50 ppm
1074-P3	Southside window caulking near front of building	4 – 3' x 5' windows	PCBs	1.06	50 ppm

[1] TSCA PCB Bulk Product Waste Limit

All results of caulking sampled are below the limit for TSCA PCB Bulk Product Waste.

Upper floor window frames should be inspected during cleanup/demolition. Caulking not sampled should be presumed to be PCB Bulk Product Waste unless sampled.

3.4 PCB Conclusions and Recommendations:

- **Inspect any fluorescent light fixtures identified during cleanup/demolition for ballasts.**
- **Dispose of all light ballasts as PCB containing waste unless specifically labeled as "No PCBs".**
- **Verify that the disposal facility will accept materials with trace levels of PCBs (caulking).**

4 MERCURY:

4.1 Fluorescent Light Bulbs/High-Intensity Floodlights:

Light fixtures are as follows:

Approx. six fixtures were noted in the accessible ground floor warehouse space, with only 2 or 3 intact bulbs. Office spaces on the 1st, 2nd, and 3rd floors were partially collapsed and inaccessible for a full inspection.

Based on the floor area, approximately 30 fixtures are expected to have been present. Many of these may be mixed in with debris from building collapse, with broken bulbs.

Any intact bulbs identified during cleanup/demolition should be segregated and inspected to determine if they are mercury-containing universal waste (silver tips).

Mercury content of fluorescent bulbs has decreased over recent years. Non-mercury bulbs generally have green tips on the ends. These may contain low levels of mercury but are considered to be non-hazardous.

Although some of the bulbs may contain mercury at levels below disposal regulatory limits, the number of types of bulbs, and the lack of any discernible location pattern of specific types, indicate that further investigation/delineation of possible unregulated bulbs may be cost-prohibitive.

Therefore, unless the absence of mercury can be confirmed, all bulbs should be carefully removed, packaged, and disposed of as mercury-containing universal waste.

High-intensity floodlights may contain heavy metal vapors that may be released if the bulb is broken. Any high-intensity bulbs on the site should be carefully removed, packaged to prevent breakage, and disposed of as universal waste. A few bulbs were noted in the main interior area and around the exterior.

4.2 Thermostats, Switches, and Timers:

Thermostats historically contained a mercury bulb that acts as a switch for an HVAC system. These bulbs are readily observed when the cover is removed.

No mercury-containing devices were noted. However, the basement mechanical room was inaccessible for inspection.

Any thermostats or switches (often associated with boiler systems) suspected of having a mercury-containing bulb should be disposed of mercury-containing waste.

Although it may be possible to remove the mercury bulbs from the thermostats, the risk of a potential spill for the small quantity of mercury-containing does warrant attempted separate removal of mercury bulbs from the thermostats.

4.3 Mercury Conclusions and Recommendations:

- **All fluorescent bulbs without green tips and high-intensity floodlights should be carefully removed, packaged, and disposed of as mercury-containing universal waste.**
- **Remove, package, and dispose of all suspect thermostats, timers, and switches as mercury-containing universal waste.**

5 CHEMICAL STORAGE:

5.1 Drums, Tanks, and Chemical Storage:

A few 55- gallon drums were noted in the yard:

- 1 drum labeled as antifreeze
- 1 drum labeled as degreaser
- 1 green plastic drum, not labeled

No other significant chemical storage was noted.

5.2 Underground Storage Tanks (USTs) and Above Ground Storage Tanks:

No *active* USTs or AST were identified on the property.

One 500 gallon gasoline AST is located on the south side of the property. The present location/support does not appear to be the original in-service location. The original location is not known.

This investigation was limited to visual observation of the surface. It did not include sub-surface evaluations (such as Ground-penetrating Radar) or record research.

5.3 Paints, Solvents, Adhesives, and Small Misc. Fluids:

A few small containers of vehicle maintenance fluids are located around the yard, near large forklifts.

5.4 Batteries:

No batteries of concern were identified on the property.

5.5 Staining:

No significant staining was noted through the building.

5.6 Chemical Storage Conclusions and Recommendations:

- **Remove drums, AST, heavy equipment, and other miscellaneous items from the yard prior to building demolition. Inspect soils beneath equipment for any leaked fluids.**

6 BIOLOGICAL CONCERNS (other than mold):

6.1 Sanitary Sewers:

No open sewers, spills, leaks, or sewer odors were noted.

6.2 Bird Feces:

No significant bird feces were observed in the subject area.

6.3 Biological Concerns Conclusions and Recommendations:

- **No further action is likely required recommended in regards to potential Biological Concerns in the subject area**.

7 OTHER/MISCELLANEOUS:

7.1 Mechanical Equipment:

7.1.1 *Boiler Systems*:

Boilers often have anti-corrosion treatment chemicals that would require special disposal procedures.

Two boilers were noted: one on the ground floor and a smaller one in the basement. Due to size, these are not suspected of having anti-corrosion treatment chemicals.

7.1.2 *Refrigerant Systems*:

Refrigerants such as Freon require special extraction and disposal procedures.

No rooftop HVAC units were noted.

A few small household refrigerators *may* be present in inaccessible office spaces on the 1st, 2nd, and 3rd floors.

7.1.3 *Compressor Systems:*

Compressors often contain various oils and lubricants that should be extracted and properly disposed of prior to demolition of equipment.

No compressors were identified in the structure.

7.1.4 *Elevators:*

No elevators are present in the building. There are indications that two hydraulic lifts may have been present in the warehouse area.

Also, there is a 5-foot diameter round plate in the warehouse area. Although the purpose of the plate was not identified, it may have been related to a lift, an under vehicle service pit, or a wastewater system. The plate should be removed to inspect the area below.

7.2 Other/Miscellaneous Conclusions and Recommendations:

- **Extract refrigerant from associated systems prior to demolition.**
- **Inspect the area below the 5-foot diameter round plate in the warehouse area.**

8 SUMMARY OF RECOMMENDATIONS:

8.1 ACM Recommendations:

- Prepare abatement design documents to identify the locations of ACM and work practices to be employed during this project. This work should be performed by the USEPA AHERA accredited Asbestos Project Designer.
- Third-party asbestos final clearance testing required prior to building demolition or new occupancy. Daily asbestos air sampling during abatement also recommended.
- Any building material that is not listed in this report and/or tested must be assumed to be ACM and treated as ACM until confirmed otherwise via laboratory testing.

8.2 LBP in Paint Recommendations:

- Remove/impact LBP components in accordance with OSHA Lead in Construction Standard.

8.3 PCB Recommendations:

- Inspect any fluorescent light fixtures identified during cleanup/demolition for ballasts.
- Dispose of all light ballasts as PCB containing waste unless specifically labeled as "No PCBs".
- Verify that the disposal facility will accept materials with trace levels of PCBs (caulking).

8.4 Mercury Recommendations:

- All fluorescent bulbs without green tips and high-intensity floodlights should be carefully removed, packaged, and disposed of as mercury-containing universal waste.
- Remove, package, and dispose of all suspect thermostats, timers, and switches as mercury-containing universal waste.

8.5 Chemical Storage Recommendations:

- Remove drums, AST, heavy equipment, and other miscellaneous items from the yard prior to building demolition. Inspect soils beneath equipment for any leaked fluids.

8.6 Biological Concerns Recommendations (excluding mold):

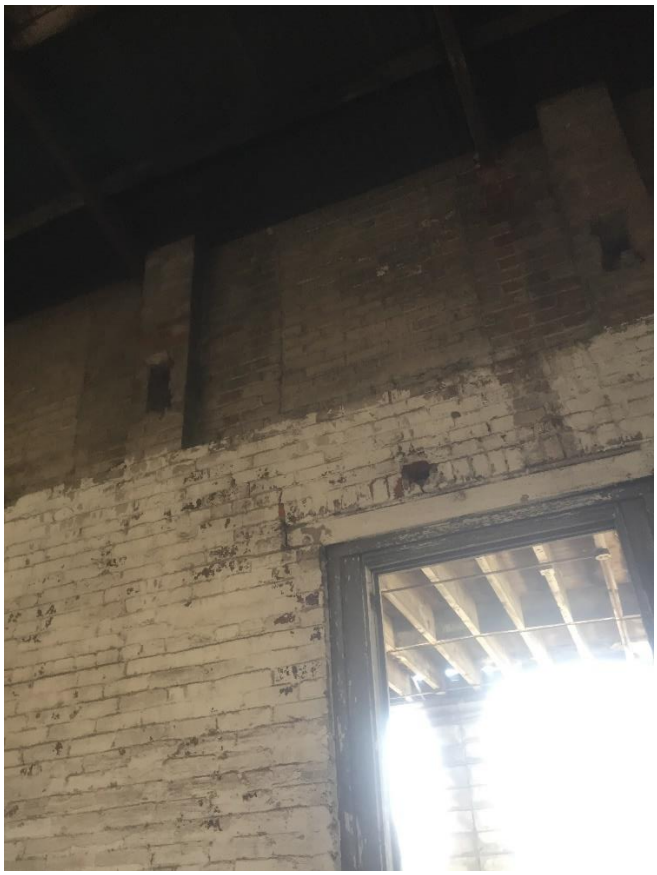
- No further action is recommended regarding potential Biological Concerns in the subject area.

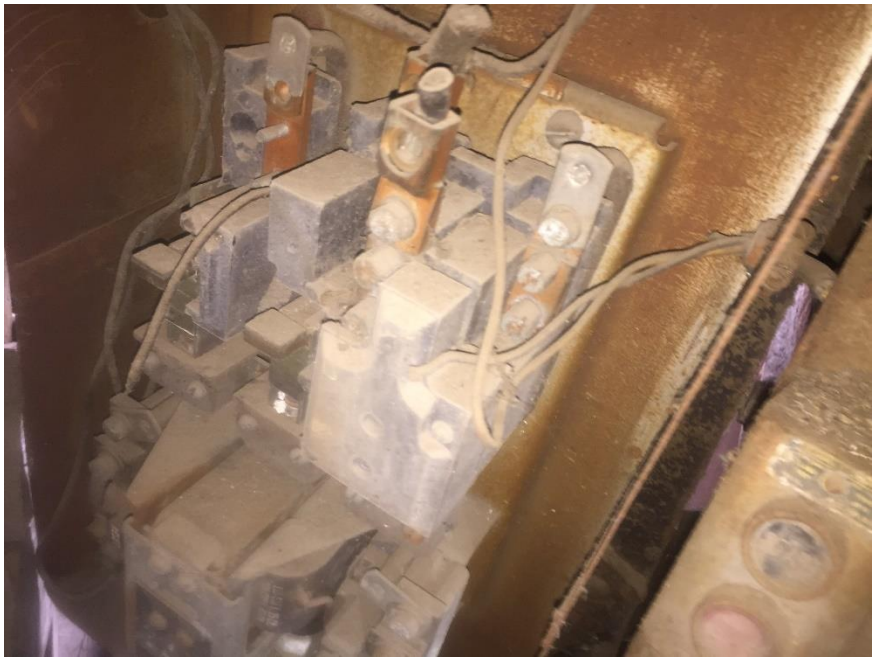
8.7 Other/Miscellaneous Recommendations:

- Extract refrigerant from associated systems prior to demolition.
- Inspect the area below the 5-foot diameter round plate in the warehouse area.

9.1 Site Photographs

Photos





A. Asbestos (ACM)

A1. Analytical Methodology
A2. Table of Sample Results
A3. Asbestos Laboratory Analytical Reports

A1. Analytical Methodology:

Definitions:

ACM: asbestos containing material
RACM: regulated asbestos containing material
VCM: vermiculite containing material
TSI: thermal system insulation (pipe insulation)
SSI: surfacing material (spray-on fireproofing, plaster, etc.)
Miscellaneous finish material: sheetrock, floor tile, roofing, other
NOB: non-organically bound non-friable material (e.g. roofing, floor tile, etc.)

Friable vs. Non-friable**:**

1. A friable material is one that can be easily crumbled, pulverized, or reduced to powder by hand pressure. This characteristic of a building material is directly linked to the potential of the material to release asbestos fibers into the air.
2. Non-friable are the materials that are organically bound normally fall into this category as long as they are in good condition. Some of the materials, which would be defined as non-friable material, include floor tiles, roofing materials, mastic, etc. Non-friable ACM are categorized into two (2) categories by USEPA: Category I non-friable materials, such as resilient floor tiles, and roofing materials are not expected to become friable when disturbed. Non-friable ACM, such as laboratory table tops and transite siding/paneling, are considered to be a category II non-friable ACM.
3.

Criteria for Positive Classification as Regulated Asbestos Containing Material (RACM):

Asbestos containing material (ACM)

The EPA defines ACM as any material having an Asbestos content greater than 1%. If the analytical results for any sample of suspected material indicate that asbestos is present above a level of one percent, the building material is classified as regulated ACM (RACM) which triggers management and/or abatement, if impacted.

Vermiculite (VCM)

Related to cross-contamination in the mining industry, as well as new concerns about Amphibole minerals with crystalline structure similar to Asbestos, bulk samples found to contain greater than or equal to ten percent Vermiculite require further classification *in NYS/NYC*. Vermiculite is not currently regulated in New Jersey.

Representative Nature of All Sampling:

The purpose of bulk sampling is to characterize representative materials, not remove and test every square inch of material. The Inspector/Investigator uses a combination of EPA recommended bulk sampling criteria and professional judgment to select representative sampling locations of each suspect material type. In certain rare cases, building materials may appear to be homogeneous (e.g. plaster, roofing, etc.) but vary section to section due to patching, different installation methods floor-to-floor, and other causes. Additional testing beyond normal survey protocol can be required for these scenarios.

HOMOGENEOUS AREAS: A homogeneous area is a portion of a building/structure with similar/same installed materials such that bulk analysis results from one area can be applied in the next for the purpose of asbestos quantification.

'FIRST POSITIVE STOP': In order to reduce unnecessary survey laboratory analysis costs when samples are collected in groups of three (3) or two (2), as required by EPA sampling criteria, when the first or second sample is reported as positive in a group, then the additional samples are declared positive with no analysis.

SAMPLING FROM SLAB UP: Because older/original bottom layer materials are more likely to contain asbestos versus newer layers, materials such as floor tiles and roofing are sampled from the slab up. If a positive lower or middle layer is identified, all materials in the layered system can be declared ACM if they cannot be separated during the abatement process.

SHEETROCK JOINT COMPOUND TESTING: Since most sheetrock wallboard systems are painted, it is difficult to impossible to assess where one type of material starts and ends. EPA has published memos concerning composite sampling that were not approved by OSHA which requires discrete sampling. This agency does not recognize composite testing of joint compound for the purpose of preventing employee exposure. NYSDOL also requires separate sampling of joint compound. The PLM analysis method has been generally utilized for this material type, where samples in the trace-1% inconclusive range are also run by TEM-NOB for additional accuracy.

Non-friable asbestos samples collected are analyzed using the TEM-NOB method of analysis, as required by regulation.

Upon completion of the sampling, the samples were submitted to an accredited approved laboratory for analysis. The samples were divided into batches and analyzed by EPA Method 600/MA-82-020, Polarized Light Microscopy with dispersion staining. The percentage of each type of asbestos was determined and any remaining materials were identified. The U.S. Environmental Agency defines ACM as having an asbestos content of greater $\geq$ than 1%. If the analytical results for any sample of suspected material indicate that asbestos is present above a level of one percent, the building material is considered to contain asbestos.

1. Stereoscope Examination:

Working under a designated bulk asbestos laboratory hood, a sample is carefully poured onto the stage of the stereoscope for examination to determine if the sample is homogeneous and fibrous.

2. Slide Preparation:

A slide of each component in the sample is prepared using as little matrix material as possible. Samples are mounted on microscope slides in high dispersion refractive index liquids. For asbestos analysis, the sample is initially mounted in liquids with refractive indexes of (η) of 1.550, close to that of chrysotile asbestos. Liquids of higher refractive index may also be required for determining other asbestos forms.

3. PLM Examination:

Each slide is examined under a high quality polarized light microscope (20x-55x objective). A dispersion staining objective is also used.

The samples are first examined under plane polarizing light with the condenser set at zero. The morphology and relief of the fibers and matrix materials are observed. Next the analyzer is inserted for examination under the cross polars. Determinations are made if the fibers are isotropic or opaque with the angle of extinction noted. The condenser plate may also be inserted to produce retardation colors, depending on birefringence of the material. The sign of elongation is also determined at this time.

Refractive index is determined by matching a particular fiber with a refractive index liquid of the closest refractive index. The Becke line test is also used to cheek the refractive index. Dispersion staining is used to further characterize the components of a sample.

4. Identification of Asbestos:

Chrysotile

Chrysotile, which is the most common asbestos-form, is easily identified in liquid of refractive index 1.550 by its characteristic morphology (fibrous bundles with kinked bends) and dispersion staining colors (blue-magenta).

Amosite

Amosite is identified in 1.688 refractive index liquid by morphology (straight fibers with broomed ends) and dispersion staining colors (blue-yellow).

Crocidolite

The straight or bundled fibers of crocidolite (amphibole) are pleochroic; they appear blue-grey under plane polarized light. The fibers show negative sign of elongation and an index of refraction approaching 1.680.

Other Asbestos-Forms

Other fibrous amphiboles, which differ in refractive index from amosite, are anthophyllite

(η= 1.605), tremolite (η= 1.605), and actinolite (η= 1.680).

5. TEM/NOB Analysis:

Due to matrix interference, NJDOL requires all non-friable materials tested (i.e., floor tiles, asphalt roofing, mastics, etc.) undergo TEM (transmission electron microscopy)/NOB EPA 600/R-93/116 (non-organically bound) analysis NY ELAP 198.4 Method. This analysis method, which is conducted by an accredited independent testing laboratory, includes ashing of the sample matrix to reduce binder interference to provide a lower detection limit.

A2. Asbestos Bulk Sampling & Analysis Results of Areas Inspected:

According to EPA definition a material that contains 1% or greater asbestos content is classified as regulated ACM. Representative bulk sampling and analysis was conducted of the following:

SAMPLE ID	HA	SAMPLE LOCATION	MATERIAL DESCRIPTION	FRIABLE/ NON-FRIABLE	LAB RESULTS	
					%Asbestos	%Vermiculite
1	01	1st Floor – Center on Floor	Roofing Debris	Non-Friable	None Detected	None Detected
2	01	1st Floor – Center on Floor	Roofing Debris	Non-Friable	None Detected	None Detected
3	01	1st Floor – Back on the Floor	Roofing Debris	Non-Friable	0.36% Chrysotile	None Detected
4	01	1st Floor – Back on the Floor	Roofing Debris	Non-Friable	None Detected	None Detected
5	02	1st Floor – SW Bathroom	Plaster White Coat	Friable	None Detected	None Detected
6	03	1st Floor – SW Bathroom	Plaster Brown Coat	Friable	None Detected	None Detected
7	02	1st Floor – SW Bathroom	Plaster White Coat	Friable	None Detected	None Detected
8	03	1st Floor – SW Bathroom	Plaster Brown Coat	Friable	None Detected	None Detected
9	02	1st Floor – SW Bathroom	Plaster White Coat	Friable	None Detected	None Detected
10	03	1st Floor – SW Bathroom	Plaster Brown Coat	Friable	None Detected	None Detected
11	04	1st Floor – 1st Office	Floor Tile	Non-Friable	6.39% Chrysotile	None Detected
12	04	1st Floor – 1st Office	Floor Tile	Non-Friable	Positive Stop	-
13	04	1st Floor – 1st Office	Floor Tile	Non-Friable	Positive Stop	-
14	05	1st Floor – Boiler Room	Mortar	Friable	None Detected	None Detected
15	05	1st Floor – Boiler Room	Mortar	Friable	None Detected	None Detected
16	05	1st Floor – Boiler Room	Mortar	Friable	None Detected	None Detected
17	06	1st Floor – Boiler Room	Brick	Friable	None Detected	None Detected
18	06	1st Floor – Boiler Room	Brick	Friable	None Detected	None Detected
19	06	1st Floor – Boiler Room	Brick	Friable	None Detected	None Detected
20	07	1st Floor – T.O. Side	Glazing	Non-Friable	10.54% Chrysotile	None Detected
21	07	1st Floor – Outside Window	Glazing	Non-Friable	Positive Stop	-
22	07	1st Floor – Outside Window	Glazing	Non-Friable	Positive Stop	-
23	08	1st Floor – Back Area	Insulation (Wall)	Friable	None Detected	None Detected

SAMPLE ID	HA	SAMPLE LOCATION	MATERIAL DESCRIPTION	FRIABLE/ NON-FRIABLE	LAB RESULTS	
					%Asbestos	%Vermiculite
24	08	1st Floor – Back Area	Insulation (Wall)	Friable	None Detected	None Detected
25	08	1st Floor – Back Area	Insulation (Wall)	Friable	None Detected	None Detected
26	09	1st Floor – Center Area Top	Wall Panel	Friable	None Detected	None Detected
27	09	1st Floor – Center Area Top	Wall Panel	Friable	None Detected	None Detected
28	09	1st Floor – Center Area Top	Wall Panel	Friable	None Detected	None Detected
29	09	1st Floor – Center Area Top	Wall Panel	Friable	None Detected	None Detected
30	10	1st Floor – Exterior Window	Caulking	Non-Friable	None Detected	None Detected
31	10	1st Floor – Exterior Window	Caulking	Non-Friable	None Detected	None Detected
32	10	1st Floor – Exterior Window	Caulking	Non-Friable	None Detected	None Detected
33	11	1st Floor – Interior Wall	Exterior Brick	Friable	None Detected	None Detected
34	12	1st Floor – Interior Wall	Brick Mortar	Friable	None Detected	None Detected
35	11	1st Floor – Interior Wall	Exterior Brick	Friable	None Detected	None Detected
36	12	1st Floor – Interior Wall	Brick Mortar	Friable	None Detected	None Detected
37	11	1st Floor – Interior Wall	Exterior Brick	Friable	None Detected	None Detected
38	12	1st Floor – Interior Wall	Brick Mortar	Friable	None Detected	None Detected
39	11	1st Floor – Interior Wall	Exterior Brick	Friable	None Detected	None Detected
40	12	1st Floor – Interior Wall	Brick Mortar	Friable	None Detected	None Detected
41	11	1st Floor – Interior Wall	Exterior Brick	Friable	None Detected	None Detected
42	12	1st Floor – Interior Wall	Brick Mortar	Friable	None Detected	None Detected
43	13	1st Floor – Interior Wall	Interior CMU	Friable	None Detected	None Detected
44	14	1st Floor – Interior Wall	CMU Mortar	Friable	None Detected	None Detected
45	13	1st Floor – Interior Wall	Interior CMU	Friable	None Detected	None Detected
46	14	1st Floor – Interior Wall	CMU Mortar	Friable	None Detected	None Detected
47	13	1st Floor – Interior Wall	Interior CMU	Friable	None Detected	None Detected
48	14	1st Floor – Interior Wall	CMU Mortar	Friable	None Detected	None Detected

SAMPLE ID	HA	SAMPLE LOCATION	MATERIAL DESCRIPTION	FRIABLE/ NON-FRIABLE	LAB RESULTS	
					%Asbestos	%Vermiculite
49	13	1st Floor – Interior Wall	Interior CMU	Friable	None Detected	None Detected
50	14	1st Floor – Interior Wall	CMU Mortar	Friable	None Detected	None Detected
51	13	1st Floor – Interior Wall	Interior CMU	Friable	None Detected	None Detected
52	14	1st Floor – Interior Wall	CMU Mortar	Friable	None Detected	None Detected
53	15	1st Floor – Loose on the Floor	Flashing Debris	Non-Friable	6.03% Chrysotile	None Detected
54	15	1st Floor – Loose on the Floor	Flashing Debris	Non-Friable	Positive Stop	-
55	16	1st Floor – Back Area	Wire Wrapping	Non-Friable	Trace Chrysotile Trace Anthophyllite	None Detected
56	16	1st Floor – Back Area	Wire Wrapping	Non-Friable	Trace Chrysotile Trace Anthophyllite	None Detected
57	17	1st Floor – Front Area	Wire Wrapping	Non-Friable	None Detected	None Detected
58	17	1st Floor – Front Area	Wire Wrapping	Non-Friable	None Detected	None Detected
59	18	1st Floor – Front Area	CMU Plaster	Friable	None Detected	None Detected
60	18	1st Floor – Front Area	CMU Plaster	Friable	None Detected	None Detected
61	18	1st Floor – Front Area	CMU Plaster	Friable	None Detected	None Detected
62	19	1st Floor – Center Area	Roof Underlayment	Friable	None Detected	None Detected
63	19	1st Floor – Center Area	Roof Underlayment	Friable	None Detected	None Detected
64	19	1st Floor – Center Area	Roof Underlayment	Friable	None Detected	None Detected
65	19	1st Floor – Center Area	Roof Underlayment	Friable	None Detected	None Detected
66	19	1st Floor – Center Area	Roof Underlayment	Friable	None Detected	None Detected
67	20	1st Floor – Back Area	Electrical Liner	Non-Friable	Trace Chrysotile	None Detected
68	20	1st Floor – Back Area	Electrical Liner	Non-Friable	None Detected	None Detected
69	20	1st Floor – Back Area	Electrical Liner	Non-Friable	None Detected	None Detected
70	21	1st Floor – Back Area	Electrical Panel Holder	Friable	None Detected	None Detected
71	21	1st Floor – Back Area	Electrical Panel Holder	Friable	None Detected	None Detected
72	21	1st Floor – Back Area	Electrical Panel Holder	Friable	None Detected	None Detected

SAMPLE ID	HA	SAMPLE LOCATION	MATERIAL DESCRIPTION	FRIABLE/ NON-FRIABLE	LAB RESULTS	
					%Asbestos	%Vermiculite
73	22	1st Floor – Front Area	Wall Insulation	Friable	None Detected	None Detected
74	22	1st Floor – Front Area	Wall Insulation	Friable	None Detected	None Detected
75	22	1st Floor – Front Area	Wall Insulation	Friable	None Detected	None Detected
76	23	1st Floor – Exterior Wall	Brick	Friable	None Detected	None Detected
77	24	1st Floor – Exterior Wall	Mortar	Friable	None Detected	None Detected
78	23	1st Floor – Exterior Wall	Brick	Friable	None Detected	None Detected
79	24	1st Floor – Exterior Wall	Mortar	Friable	None Detected	None Detected
80	23	1st Floor – Exterior Wall	Brick	Friable	None Detected	None Detected
81	24	1st Floor – Exterior Wall	Mortar	Friable	None Detected	None Detected
82	23	1st Floor – Exterior Wall	Brick	Friable	None Detected	None Detected
83	24	1st Floor – Exterior Wall	Mortar	Friable	None Detected	None Detected

A3. Asbestos Laboratory Analytical Reports

LABORATORY TESTING SERVICES INC. 45-09 Greenpoint Ave. LIC, NY 11104 Phone: (718) 389 3470, Fax: (718) 389 3471

BULK ASBESTOS TEST REPORT

Client/Address: Omega Environmental/280 Huyler St., So. Hackensack, NJ 07606		**Project:** 551 South Second Street, Camden NJ **Project #:** 21-1074
Laboratory ID: 21-03-060	**Date of Report:** 03/08/21	**Date of Analysis:** 03/06/21 - 03/08/21

Client ID # Lab ID #	Stereomicroscope Analysis					Sample Description	% Non-Fibrous Material	% Friable Results		% All	% PLM NOB Results		% TEM NOB Results		% TOTAL Asbestos
1	A	BK	E			1st Floor, Center On Floor, Roofing Debris				1.75	*		NAD		NAD
	B	1	F												
21-03-060-01	C	198.4	G												
	D		H												
2	A	BK	E			1st Floor, Center On Floor, Roofing Debris				0.74	*		NAD		NAD
	B	1	F												
21-03-060-02	C	198.4	G												
	D		H												
3	A	BK	E			1st Floor, Back On The Floor, Roofing Debris				2.39	*		0.36	CH	0.36
	B	1	F												
21-03-060-03	C	198.4	G												
	D		H												
4	A	BK	E			1st Floor, Back On The Floor, Roofing Debris				1.92	*		NAD		NAD
	B	1	F												
21-03-060-04	C	198.4	G												
	D		H												
11	A	BR	E			1st Floor, 1st Office, Floor Tile				60.88	*		6.39	CH	6.39
	B	1	F												
21-03-060-05	C	198.4	G												
	D		H												
12	A		E			1st Floor, 1st Office, Floor Tile							NA		SAFP
	B		F												
21-03-060-06	C		G												
	D		H												

LABORATORY TESTING SERVICES INC. 45-09 Greenpoint Ave. LIC, NY 11104 Phone: (718) 389 3470, Fax: (718) 389 3471

BULK ASBESTOS TEST REPORT

Client/Address: Omega Environmental/280 Huyler St., So. Hackensack, NJ 07606		**Project:** 551 South Second Street, Camden NJ **Project #:** 21-1074
Laboratory ID: 21-03-060	**Date of Report:** 03/08/21	**Date of Analysis:** 03/06/21 - 03/08/21

Client ID # / Lab ID #	Stereomicroscope Analysis				Sample Description	% Non-Fibrous Material	% Friable Results		% All	% PLM NOB Results		% TEM NOB Results		% TOTAL Asbestos
13	A		E		1st Floor, 1st Office, Floor Tile							NA		SAFP
	B		F											
21-03-060-07	C		G											
	D		H											
20	A	GR	E		1st Floor, T.O Side, Glazing				35.12	*		10.54	CH	10.54
	B	1	F											
21-03-060-08	C	198.4	G											
	D		H											
21	A		E		1st Floor, Outside Window, Glazing				6.32	*		NA		SAFP
	B		F											
21-03-060-09	C		G											
	D		H											
22	A		E		1st Floor, Outside Window, Glazing				16.65	*		NA		SAFP
	B		F											
21-03-060-10	C		G											
	D		H											
30	A	GR	E		1st Floor, Exterior Window, Caulking				46.77	*		NAD		NAD
	B	1	F											
21-03-060-11	C	198.4	G											
	D		H											
31	A	GR	E		1st Floor, Exterior Window, Caulking				20.84	*		NAD		NAD
	B	1	F											
21-03-060-12	C	198.4	G											
	D		H											

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BULK ASBESTOS TEST REPORT

Client/Address: Omega Environmental/280 Huyler St., So. Hackensack, NJ 07606		**Project:** 551 South Second Street, Camden NJ **Project #:** 21-1074
Laboratory ID: 21-03-060	**Date of Report:** 03/08/21	**Date of Analysis:** 03/06/21 - 03/08/21

Client ID # Lab ID #	Stereomicroscope Analysis				Sample Description	% Non-Fibrous Material	% Friable Results		% All	% PLM NOB Results		% TEM NOB Results		% TOTAL Asbestos
32	A	GR	E		1st Floor, Exterior Window, Caulking				20.93	*		NAD		NAD
	B	1	F											
21-03-060-13	C	198.4	G											
	D		H											
53	A	BK	E		1st Floor, Loose On The Floor, Flashing Debris				37.71	*		6.03	CH	6.03
	B	1	F											
21-03-060-14	C	198.4	G											
	D		H											
54	A		E		1st Floor, Loose On The Floor, Flashing Debris					*		NA		SAFP
	B		F											
21-03-060-15	C		G											
	D		H											
55	A	GR	E		1st Floor, Back Area, Wire Wrapping				37.25	*		TRACE	CH	TRACE
	B	1	F									TRACE	ANTH	
21-03-060-16	C	198.4	G											
	D		H											
56	A	GR	E		1st Floor, Back Area, Wire Wrapping				33.24	*		TRACE	CH	TRACE
	B	1	F									TRACE	ANTH	
21-03-060-17	C	198.4	G											
	D		H											
57	A	BR	E		1st Floor, Front Area, Wire Wrapping				51.22	*		NAD		NAD
	B	1	F											
21-03-060-18	C	198.4	G											
	D		H											

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BULK ASBESTOS TEST REPORT

Client/Address: Omega Environmental/280 Huyler St., So. Hackensack, NJ 07606	**Project:** 551 South Second Street, Camden NJ **Project #:** 21-1074
Laboratory ID: 21-03-060 **Date of Report:** 03/08/21	**Date of Analysis:** 03/06/21 - 03/08/21

Client ID # Lab ID #	Stereomicroscope Analysis				Sample Description	% Non-Fibrous Material	% Friable Results		% AII	% PLM NOB Results		% TEM NOB Results		% TOTAL Asbestos
58	A	BR	E		1st Floor, Front Area, Wire Wrapping				64.40	*		NAD		NAD
	B	1	F											
21-03-060-19	C	198.4	G											
	D		H											
67	A	BK	E		1st Floor, Back Area, Electrical Linner				0.30	*		TRACE	CH	TRACE
	B	1	F											
21-03-060-20	C	198.4	G											
	D		H											
68	A	BK	E		1st Floor, Back Area, Electrical Linner				0.62	*		NAD		NAD
	B	1	F											
21-03-060-21	C	198.4	G											
	D		H											
69	A	BK	E		1st Floor, Back Area, Electrical Linner				0.48	*		NAD		NAD
	B	1	F											
21-03-060-22	C	198.4	G											
	D		H											

LABORATORY TESTING SERVICES INC. 45-09 Greenpoint Ave. LIC, NY 11104 Phone: (718) 389 3470, Fax: (718) 389 3471

BULK ASBESTOS TEST REPORT

Client/Address: Omega Environmental/280 Huyler St., So. Hackensack, NJ 07606		**Project:** 551 South Second Street, Camden NJ **Project #:** 21-1074
Laboratory ID: 21-03-060	**Date of Report:** 03/08/21	**Date of Analysis:** 03/06/21 - 03/08/21

PLM ANALYST	PLM-NOB ANALYST	TEM-NOB ANALYST	LABORATORY DIRECTOR
		A. Korionova E. Loukianova	E. Dimitrakas

LABORATORY ACCREDITATION NUMBERS: NVLAP Lab Code 101958-0, NYSDOH ELAP Lab ID 10955

- Samples will be stored for sixty (60) days. LTS Inc. should be notified within this time frame for a true duplicate analysis.
- Above results relate only to samples submitted and analyzed. This report must not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government. Test reports may not be reproduced except in full and with prior approval of LTS Inc.
- The liability of LTS Inc., with respect to the services charged, shall in no event exceed the amount of the invoice.
- Analytical Methodologies: EPA 600/M4-82-020 (Point Count only) and ELAP Methods 198.1, 198.4,198.6.
- NAD: No Asbestos Detected, NVD: No Vermiculite Detected, SAFP: Stopped at First Positive, CH: Chrysotile, AMOS: Amosite, TRE: Tremolite, ANTH: Anthophyllite, ACT: Actinolite, and CRO: Crocidolite.
- Stereomicroscopic Analysis: A: Color, B: Layers, C: Methodology, D: Cellulose, E: Fiberglass, F: Hair, G: Vermiculite, H: OTHER
- Color: BK: Black, BR: Brown, Dk BR: Dark Brown, Lt BR: Light Brown, R BR: Reddish Brown, GR: Gray, Dk GR: Dark Gray, Lt GR: Light Gray, BE: Beige, P: Pink, R: Red, T: Tan, WH: White, Off WH: Off White, Y: Yellow, BL: Blue, CR: Cream, GN: Green, O: Orange, Multi.: Multiple Colors

*** Not analyzed as per client's request. PLM NOB analysis is a method requirement, as indicated in Item 198.4, Section 6.3.2.2 and 4.1.3**

BULK ASBESTOS LABORATORY ANALYSIS REPORT

[NYS DOH ELAP ID# 10504]

CLIENT NAME: PAULUS, SOKOLOWSKI & SARTOR, LLC
ATTN: MICHAEL COHEN
3 MOUNTAINVIEW ROAD
WARREN, NJ 07059

PROJECT/AREA: CAMDEN DEMO PROJECT
551 SOUTH SECOND STREET
CAMDEN, NJ 08103

DATE SAMPLED: 3/4/2021
DATE RECEIVED: 3/5/2021
DATE ANALYZED: 3/5/2021, 3/6/2021, 3/9/2021
DATE OF REPORT: 3/10/2021

PROJECT #: 21-1074
ANALYST: TG
TEST REQUESTED: BULK ASBESTOS BY PLM
METHOD #: EPA600/M4/82/020
**TEM-NOB ANALYSIS REQUIRED TO CONFIRM NEGATIVE PLM ANALYSIS IN NY/NJ (EPA/600/M4/82/020)*

SAMPLE ID NO	LAB ID NO	SAMPLE LOCATION ROOM/AREA	MATERIAL FIELD DESCRIPTION	MATERIAL LAB DESCRIPTION	ASBESTOS DETECTED? (YES/NO)	%ASBESTOS DETECTED	TYPE OF ASBESTOS DETECTED	PREDOMINANT NON-ASBESTOS COMPONENTS	VERMICULITE DETECTED? (YES/NO)	%VERMICULITE DETECTED	COMMENTS
03-04-PSS-06	94826	FIRST FLOOR SOUTHWEST BATHROOM	PLASTER WHITE COAT	HETEROGENEOUS WHITE NONFIBROUS	NO	NAD	NAD	CARBONATES-90%, QUARTZ-7%, OTHER-3%	NO	ND	
03-04-PSS-06	94827	FIRST FLOOR SOUTHWEST BATHROOM	PLASTER BROWN COAT	HETEROGENEOUS BROWN NONFIBROUS	NO	NAD	NAD	CARBONATES-3%, QUARTZ-95%, OTHER-2%	NO	ND	
03-04-PSS-07	94828	FIRST FLOOR SOUTHWEST BATHROOM	PLASTER WHITE COAT	HETEROGENEOUS WHITE NONFIBROUS	NO	NAD	NAD	CARBONATES-90%, QUARTZ-7%, OTHER-3%	NO	ND	
03-04-PSS-08	94829	FIRST FLOOR SOUTHWEST BATHROOM	PLASTER BROWN COAT	HETEROGENEOUS BROWN NONFIBROUS	NO	NAD	NAD	CARBONATES-3%, QUARTZ-70%, GYPSUM-25%, OTHER-2%	NO	ND	
03-04-PSS-09	94830	FIRST FLOOR SOUTHWEST BATHROOM	PLASTER WHITE COAT	HETEROGENEOUS WHITE NONFIBROUS	NO	NAD	NAD	CARBONATES-99%, OTHER-1%	NO	ND	
03-04-PSS-10	94831	FIRST FLOOR SOUTHWEST BATHROOM	PLASTER BROWN COAT	HETEROGENEOUS BROWN NONFIBROUS	NO	NAD	NAD	CARBONATES-3%, QUARTZ-70%, GYPSUM-25%, OTHER-2%	NO	ND	
03-04-PSS-14	94832	FIRST FLOOR BOILER ROOM	MORTAR	HETEROGENEOUS BROWN NONFIBROUS	NO	NAD	NAD	CELLULOSE-2%, CARBONATES-35%, QUARTZ-60%, OTHER-3%	NO	ND	
03-04-PSS-15	94833	FIRST FLOOR BOILER ROOM	MORTAR	HETEROGENEOUS BROWN NONFIBROUS	NO	NAD	NAD	CELLULOSE-2%, CARBONATES-35%, QUARTZ-60%, OTHER-3%	NO	ND	
03-04-PSS-16	94834	FIRST FLOOR BOILER ROOM	MORTAR	HETEROGENEOUS BROWN NONFIBROUS	NO	NAD	NAD	CELLULOSE-2%, CARBONATES-35%, QUARTZ-60%, OTHER-3%	NO	ND	
03-04-PSS-17	94835	FIRST FLOOR BOILER ROOM	BRICK	HETEROGENEOUS RED NONFIBROUS	NO	NAD	NAD	QUARTZ-5%, GYPSUM-95%	NO	ND	
03-04-PSS-18	94836	FIRST FLOOR BOILER ROOM	BRICK	HETEROGENEOUS RED NONFIBROUS	NO	NAD	NAD	QUARTZ-5%, GYPSUM-95%	NO	ND	
03-04-PSS-19	94837	FIRST FLOOR BOILER ROOM	BRICK	HETEROGENEOUS RED NONFIBROUS	NO	NAD	NAD	QUARTZ-5%, GYPSUM-95%	NO	ND	
03-04-PSS-23	94838	FIRST FLOOR BACK AREA	INSULATION (WALL)	HETEROGENEOUS BLACK FIBROUS	NO	NAD	NAD	CELLULOSE-99%, OTHER-1%	NO	ND	

NOTES:
(1.) uncertainty associated with test method = +/- 0.5% by weight
(2.) results relate to items tested only
***ANALYTICAL RESULTS RELATE TO THE SAMPLE(S) AS RECEIVED BY THE LABORATORY**
(3.) lab reports shall not be reproduced except in full, without written approval of the laboratory
ND = None Detected
NAD = No Asbestos Detected

Report Approved By: _____

Laboratory Director or Approved Representative

OMEGA ENVIRONMENTAL SERVICES, INC
280 Huyler Street, South Hackensack, NJ 07606 Tel: (201) 489 8700

BULK ASBESTOS LABORATORY ANALYSIS REPORT

[NYS DOH ELAP ID# 10504]

CLIENT NAME: PAULUS, SOKOLOWSKI & SARTOR, LLC
ATTN: MICHAEL COHEN
3 MOUNTAINVIEW ROAD
WARREN, NJ 07059

PROJECT/AREA: CAMDEN DEMO PROJECT
551 SOUTH SECOND STREET
CAMDEN, NJ 08103

DATE SAMPLED: 3/4/2021
DATE RECEIVED: 3/5/2021
DATE ANALYZED: 3/5/2021, 3/6/2021, 3/9/2021
DATE OF REPORT: 3/10/2021

PROJECT #: 21-1074
ANALYST: TG
TEST REQUESTED: BULK ASBESTOS BY PLM
METHOD #: EPA600/M4/82/020
**TEM-NOB ANALYSIS REQUIRED TO CONFIRM NEGATIVE PLM ANALYSIS IN NY/NJ (EPA/600/M4/82/020)*

SAMPLE ID NO	LAB ID NO	SAMPLE LOCATION ROOM/AREA	MATERIAL FIELD DESCRIPTION	MATERIAL LAB DESCRIPTION	ASBESTOS DETECTED? (YES/NO)	%ASBESTOS DETECTED	TYPE OF ASBESTOS DETECTED	PREDOMINANT NON-ASBESTOS COMPONENTS	VERMICULITE DETECTED? (YES/NO)	%VERMICULITE DETECTED	COMMENTS
03-04-PSS-24	94839	FIRST FLOOR BACK AREA	INSULATION (WALL)	HETEROGENEOUS BLACK FIBROUS	NO	NAD	NAD	CELLULOSE-99%, OTHER-1%	NO	ND	
03-04-PSS-25	94840	FIRST FLOOR BACK AREA	INSULATION (WALL)	HETEROGENEOUS BLACK FIBROUS	NO	NAD	NAD	CELLULOSE-99%, OTHER-1%	NO	ND	
03-04-PSS-26	94841	FIRST FLOOR CENTER AREA TOP	WALL PANEL	HETEROGENEOUS TAN FIBROUS	NO	NAD	NAD	CELLULOSE-99%, OTHER-1%	NO	ND	
03-04-PSS-27	94842	FIRST FLOOR CENTER AREA TOP	WALL PANEL	HETEROGENEOUS TAN FIBROUS	NO	NAD	NAD	CELLULOSE-99%, OTHER-1%	NO	ND	
03-04-PSS-28	94843	FIRST FLOOR CENTER AREA TOP	WALL PANEL	HETEROGENEOUS TAN FIBROUS	NO	NAD	NAD	CELLULOSE-99%, OTHER-1%	NO	ND	
03-04-PSS-29	94844	FIRST FLOOR CENTER AREA TOP	WALL PANEL	HETEROGENEOUS TAN FIBROUS	NO	NAD	NAD	CELLULOSE-99%, OTHER-1%	NO	ND	
03-04-PSS-33	94845	FIRST FLOOR INTERIOR WALL	INTERIOR BRICK	HETEROGENEOUS RED NONFIBROUS	NO	NAD	NAD	QUARTZ-8%, GYPSUM-90%, OTHER-2%	NO	ND	
03-04-PSS-34	94846	FIRST FLOOR INTERIOR WALL	BRICK MORTAR	HETEROGENEOUS TAN NONFIBROUS	NO	NAD	NAD	CARBONATES-50%, QUARTZ-50%	NO	ND	
03-04-PSS-35	94847	FIRST FLOOR INTERIOR WALL	INTERIOR BRICK	HETEROGENEOUS RED NONFIBROUS	NO	NAD	NAD	QUARTZ-8%, GYPSUM-90%, OTHER-2%	NO	ND	
03-04-PSS-36	94848	FIRST FLOOR INTERIOR WALL	BRICK MORTAR	HETEROGENEOUS TAN NONFIBROUS	NO	NAD	NAD	CARBONATES-50%, QUARTZ-50%	NO	ND	
03-04-PSS-37	94849	FIRST FLOOR INTERIOR WALL	INTERIOR BRICK	HETEROGENEOUS RED NONFIBROUS	NO	NAD	NAD	QUARTZ-8%, GYPSUM-90%, OTHER-2%	NO	ND	
03-04-PSS-38	94850	FIRST FLOOR INTERIOR WALL	BRICK MORTAR	HETEROGENEOUS TAN NONFIBROUS	NO	NAD	NAD	CARBONATES-50%, QUARTZ-50%	NO	ND	
03-04-PSS-39	94851	FIRST FLOOR INTERIOR WALL	INTERIOR BRICK	HETEROGENEOUS RED NONFIBROUS	NO	NAD	NAD	QUARTZ-8%, GYPSUM-90%, OTHER-2%	NO	ND	

NOTES: (1.) uncertainty associated with test method = +/- 0.5% by weight
(2.) results relate to items tested only
(3.) lab reports shall not be reproduced except in full, without written approval of the laboratory
ND = None Detected
NAD = No Asbestos Detected
***ANALYTICAL RESULTS RELATE TO THE SAMPLE(S) AS RECEIVED BY THE LABORATORY**

Report Approved By: _____
Laboratory Director or Approved Representative

OMEGA ENVIRONMENTAL SERVICES, INC
280 Huyler Street, South Hackensack, NJ 07606 Tel: (201) 489 8700

BULK ASBESTOS LABORATORY ANALYSIS REPORT

[NYS DOH ELAP ID# 10504]

CLIENT NAME: PAULUS, SOKOLOWSKI & SARTOR, LLC
ATTN: MICHAEL COHEN
3 MOUNTAINVIEW ROAD
WARREN, NJ 07059

PROJECT/AREA: CAMDEN DEMO PROJECT
551 SOUTH SECOND STREET
CAMDEN, NJ 08103

PROJECT #: 21-1074
DATE SAMPLED: 3/4/2021
ANALYST: TG
DATE RECEIVED: 3/5/2021
TEST REQUESTED: BULK ASBESTOS BY PLM
DATE ANALYZED: 3/5/2021, 3/6/2021, 3/9/2021
METHOD #: EPA600/M4/82/020
DATE OF REPORT: 3/10/2021
**TEM-NOB ANALYSIS REQUIRED TO CONFIRM NEGATIVE PLM ANALYSIS IN NY/NJ (EPA/600/M4/82/020)*

SAMPLE ID NO	LAB ID NO	SAMPLE LOCATION ROOM/AREA	MATERIAL FIELD DESCRIPTION	MATERIAL LAB DESCRIPTION	ASBESTOS DETECTED? (YES/NO)	%ASBESTOS DETECTED	TYPE OF ASBESTOS DETECTED	PREDOMINANT NON-ASBESTOS COMPONENTS	VERMICULITE DETECTED? (YES/NO)	%VERMICULITE DETECTED	COMMENTS
03-04-PSS-40	94852	FIRST FLOOR INTERIOR WALL	BRICK MORTAR	HETEROGENEOUS TAN NONFIBROUS	NO	NAD	NAD	CARBONATES-50%, QUARTZ-50%	NO	ND	
03-04-PSS-41	94853	FIRST FLOOR INTERIOR WALL	INTERIOR BRICK	HETEROGENEOUS RED NONFIBROUS	NO	NAD	NAD	QUARTZ-8%, GYPSUM-90%, OTHER-2%	NO	ND	
03-04-PSS-42	94854	FIRST FLOOR INTERIOR WALL	BRICK MORTAR	HETEROGENEOUS TAN NONFIBROUS	NO	NAD	NAD	CARBONATES-50%, QUARTZ-50%	NO	ND	
03-04-PSS-43	94855	FIRST FLOOR INTERIOR WALL	INTERIOR CMU	HETEROGENEOUS GRAY NONFIBROUS	NO	NAD	NAD	MINERAL WOOL-10%, CARBONATES-28%, QUARTZ-60%, OTHER-2%	NO	ND	
03-04-PSS-44	94856	FIRST FLOOR INTERIOR WALL	CMU MORTAR	HETEROGENEOUS TAN NONFIBROUS	NO	NAD	NAD	CARBONATES-60%, QUARTZ-40%	NO	ND	
03-04-PSS-45	94857	FIRST FLOOR INTERIOR WALL	INTERIOR CMU	HETEROGENEOUS GRAY NONFIBROUS	NO	NAD	NAD	MINERAL WOOL-10%, CARBONATES-50%, QUARTZ-42%	NO	ND	
03-04-PSS-46	94858	FIRST FLOOR INTERIOR WALL	CMU MORTAR	HETEROGENEOUS TAN NONFIBROUS	NO	NAD	NAD	CARBONATES-60%, QUARTZ-40%	NO	ND	
03-04-PSS-47	94859	FIRST FLOOR INTERIOR WALL	INTERIOR CMU	HETEROGENEOUS GRAY NONFIBROUS	NO	NAD	NAD	CARBONATES-40%, QUARTZ-60%	NO	ND	
03-04-PSS-48	94860	FIRST FLOOR INTERIOR WALL	CMU MORTAR	HETEROGENEOUS TAN NONFIBROUS	NO	NAD	NAD	CARBONATES-60%, QUARTZ-40%	NO	ND	
03-04-PSS-49	94861	FIRST FLOOR INTERIOR WALL	INTERIOR CMU	HETEROGENEOUS GRAY NONFIBROUS	NO	NAD	NAD	CARBONATES-40%, QUARTZ-60%	NO	ND	
03-04-PSS-50	94862	FIRST FLOOR INTERIOR WALL	CMU MORTAR	HETEROGENEOUS TAN NONFIBROUS	NO	NAD	NAD	CARBONATES-60%, QUARTZ-40%	NO	ND	
03-04-PSS-51	94863	FIRST FLOOR INTERIOR WALL	INTERIOR CMU	HETEROGENEOUS GRAY NONFIBROUS	NO	NAD	NAD	CARBONATES-40%, QUARTZ-60%	NO	ND	
03-04-PSS-52	94864	FIRST FLOOR INTERIOR WALL	CMU MORTAR	HETEROGENEOUS TAN NONFIBROUS	NO	NAD	NAD	CARBONATES-60%, QUARTZ-40%	NO	ND	

NOTES: (1.) uncertainty associated with test method = +/- 0.5% by weight
(2.) results relate to items tested only
***ANALYTICAL RESULTS RELATE TO THE SAMPLE(S) AS RECEIVED BY THE LABORATORY**
(3.) lab reports shall not be reproduced except in full, without written approval of the laboratory
ND = None Detected
NAD = No Asbestos Detected

Report Approved By: _____
Laboratory Director or Approved Representative

OMEGA ENVIRONMENTAL SERVICES, INC
280 Huyler Street, South Hackensack, NJ 07606 Tel: (201) 489 8700

BULK ASBESTOS LABORATORY ANALYSIS REPORT

[NYS DOH ELAP ID# 10504]

CLIENT NAME: PAULUS, SOKOLOWSKI & SARTOR, LLC
ATTN: MICHAEL COHEN
3 MOUNTAINVIEW ROAD
WARREN, NJ 07059

PROJECT/AREA: CAMDEN DEMO PROJECT
551 SOUTH SECOND STREET
CAMDEN, NJ 08103

DATE SAMPLED: 3/4/2021
DATE RECEIVED: 3/5/2021
DATE ANALYZED: 3/5/2021, 3/6/2021, 3/9/2021
DATE OF REPORT: 3/10/2021

PROJECT #: 21-1074
ANALYST: TG
TEST REQUESTED: BULK ASBESTOS BY PLM
METHOD #: EPA600/M4/82/020
"TEM-NOB ANALYSIS REQUIRED TO CONFIRM NEGATIVE PLM ANALYSIS IN NY/NJ (EPA/600/M4/82/020)

SAMPLE ID NO	LAB ID NO	SAMPLE LOCATION ROOM/AREA	MATERIAL FIELD DESCRIPTION	MATERIAL LAB DESCRIPTION	ASBESTOS DETECTED? (YES/NO)	%ASBESTOS DETECTED	TYPE OF ASBESTOS DETECTED	PREDOMINANT NON-ASBESTOS COMPONENTS	VERMICULITE DETECTED? (YES/NO)	%VERMICULITE DETECTED	COMMENTS
03-04-PSS-59	94865	FIRST FLOOR FRONT AREA	CMU PLASTER	HETEROGENEOUS TAN NONFIBROUS	NO	NAD	NAD	CARBONATES-65%, QUARTZ-35%	NO	ND	
03-04-PSS-60	94866	FIRST FLOOR FRONT AREA	CMU PLASTER	HETEROGENEOUS TAN NONFIBROUS	NO	NAD	NAD	CARBONATES-65%, QUARTZ-35%	NO	ND	
03-04-PSS-61	94867	FIRST FLOOR FRONT AREA	CMU PLASTER	HETEROGENEOUS TAN NONFIBROUS	NO	NAD	NAD	CARBONATES-65%, QUARTZ-35%	NO	ND	
03-04-PSS-62	94868	FIRST FLOOR CENTER AREA	ROOF UNDERLAYMENT	HETEROGENEOUS TAN FIBROUS	NO	NAD	NAD	CELLULOSE-10%, CARBONATES-25%, GYPSUM-65%	NO	ND	
03-04-PSS-63	94869	FIRST FLOOR CENTER AREA	ROOF UNDERLAYMENT	HETEROGENEOUS TAN FIBROUS	NO	NAD	NAD	CELLULOSE-10%, CARBONATES-25%, GYPSUM-65%	NO	ND	
03-04-PSS-64	94870	FIRST FLOOR CENTER AREA	ROOF UNDERLAYMENT	HETEROGENEOUS TAN FIBROUS	NO	NAD	NAD	CELLULOSE-20%, CARBONATES-25%, GYPSUM-55%	NO	ND	
03-04-PSS-65	94871	FIRST FLOOR CENTER AREA	ROOF UNDERLAYMENT	HETEROGENEOUS TAN FIBROUS	NO	NAD	NAD	CELLULOSE-20%, CARBONATES-25%, GYPSUM-55%	NO	ND	
03-04-PSS-66	94872	FIRST FLOOR CENTER AREA	ROOF UNDERLAYMENT	HETEROGENEOUS TAN FIBROUS	NO	NAD	NAD	CELLULOSE-20%, CARBONATES-25%, GYPSUM-55%	NO	ND	
03-04-PSS-70	94873	FIRST FLOOR BACK AREA	ELECTRICAL PANEL HOLDER	HETEROGENEOUS BROWN FIBROUS	NO	NAD	NAD	CELLULOSE-99%, OTHER-1%	NO	ND	
03-04-PSS-71	94874	FIRST FLOOR BACK AREA	ELECTRICAL PANEL HOLDER	HETEROGENEOUS BROWN FIBROUS	NO	NAD	NAD	CELLULOSE-99%, OTHER-1%	NO	ND	
03-04-PSS-72	94875	FIRST FLOOR BACK AREA	ELECTRICAL PANEL HOLDER	HETEROGENEOUS BROWN FIBROUS	NO	NAD	NAD	CELLULOSE-99%, OTHER-1%	NO	ND	
03-04-PSS-73	94876	FIRST FLOOR FRONT AREA	WALL INSULATION	HETEROGENEOUS BROWN FIBROUS	NO	NAD	NAD	QUARTZ-5%, GYPSUM-95%	NO	ND	
03-04-PSS-74	94877	FIRST FLOOR FRONT AREA	WALL INSULATION	HETEROGENEOUS BROWN FIBROUS	NO	NAD	NAD	CARBONATES-50%, QUARTZ-50%	NO	ND	

NOTES: (1.) uncertainty associated with test method = +/- 0.5% by weight
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***ANALYTICAL RESULTS RELATE TO THE SAMPLE(S) AS RECEIVED BY THE LABORATORY**
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NAD = No Asbestos Detected

Report Approved By: _____

Laboratory Director or Approved Representative

OMEGA ENVIRONMENTAL SERVICES, INC
280 Huyler Street, South Hackensack, NJ 07606 Tel: (201) 489 8700

BULK ASBESTOS LABORATORY ANALYSIS REPORT

[NYS DOH ELAP ID# 10504]

CLIENT NAME: PAULUS, SOKOLOWSKI & SARTOR, LLC
ATTN: MICHAEL COHEN
3 MOUNTAINVIEW ROAD
WARREN, NJ 07059

PROJECT/AREA: CAMDEN DEMO PROJECT
551 SOUTH SECOND STREET
CAMDEN, NJ 08103

DATE SAMPLED: 3/4/2021
DATE RECEIVED: 3/5/2021
DATE ANALYZED: 3/5/2021, 3/8/2021, 3/9/2021
DATE OF REPORT: 3/10/2021

PROJECT #: 21-1074
ANALYST: TG
TEST REQUESTED: BULK ASBESTOS BY PLM
METHOD #: EPA600/M4/82/020
**TEM-NOB ANALYSIS REQUIRED TO CONFIRM NEGATIVE PLM ANALYSIS IN NY/NJ (EPA/600/M4/82/020)*

SAMPLE ID NO	LAB ID NO	SAMPLE LOCATION ROOM/AREA	MATERIAL FIELD DESCRIPTION	MATERIAL LAB DESCRIPTION	ASBESTOS DETECTED? (YES/NO)	%ASBESTOS DETECTED	TYPE OF ASBESTOS DETECTED	PREDOMINANT NON-ASBESTOS COMPONENTS	VERMICULITE DETECTED? (YES/NO)	%VERMICULITE DETECTED	COMMENTS
03-04-PSS-75	94878	FIRST FLOOR FRONT AREA	WALL INSULATION	HETEROGENEOUS BROWN FIBROUS	NO	NAD	NAD	CARBONATES-90%, OTHER-1%	NO	ND	
03-04-PSS-76	94879	FIRST FLOOR EXTERIOR WALL	BRICK	HETEROGENEOUS RED NONFIBROUS	NO	NAD	NAD	QUARTZ-5%, GYPSUM-45%	NO	ND	
03-04-PSS-77	94880	FIRST FLOOR EXTERIOR WALL	MORTAR	HETEROGENEOUS TAN NONFIBROUS	NO	NAD	NAD	CARBONATES-50%, QUARTZ-50%	NO	ND	
03-04-PSS-78	94881	FIRST FLOOR EXTERIOR WALL	BRICK	HETEROGENEOUS RED NONFIBROUS	NO	NAD	NAD	QUARTZ-5%, GYPSUM-45%	NO	ND	
03-04-PSS-79	94882	FIRST FLOOR EXTERIOR WALL	MORTAR	HETEROGENEOUS TAN NONFIBROUS	NO	NAD	NAD	CARBONATES-50%, QUARTZ-50%	NO	ND	
03-04-PSS-80	94883	FIRST FLOOR EXTERIOR WALL	BRICK	HETEROGENEOUS RED NONFIBROUS	NO	NAD	NAD	QUARTZ-5%, GYPSUM-45%	NO	ND	
03-04-PSS-81	94884	FIRST FLOOR EXTERIOR WALL	MORTAR	HETEROGENEOUS TAN NONFIBROUS	NO	NAD	NAD	CARBONATES-50%, QUARTZ-50%	NO	ND	
03-04-PSS-82	94885	FIRST FLOOR EXTERIOR WALL	BRICK	HETEROGENEOUS RED NONFIBROUS	NO	NAD	NAD	QUARTZ-5%, GYPSUM-45%	NO	ND	
03-04-PSS-83	94886	FIRST FLOOR EXTERIOR WALL	MORTAR	HETEROGENEOUS TAN NONFIBROUS	NO	NAD	NAD	CARBONATES-50%, QUARTZ-50%	NO	ND	

NOTES:
(1.) uncertainty associated with test method = +/- 0.5% by weight
(2.) results relate to items tested only
***ANALYTICAL RESULTS RELATE TO THE SAMPLE(S) AS RECEIVED BY THE LABORATORY**
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ND = None Detected
NAD = No Asbestos Detected

Page 5 of 5

Report Approved By: _____

Laboratory Director or Approved Representative

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website www.omega-env.com Page 1 of 9 21-03-060

POSTED

CHAIN OF CUSTODY/ANALYSIS REQUEST FOR ASBESTOS BULK SAMPLES

email results to: lab@omega-env.com and albertof@omega-env.com

Project Name:	PS&S	Turnaround Time Requested: 24Hours	
Project #:	21-1074	Total # of Samples: 10	
Site Location:	551 South Second Street, Camden, NJ 08103	Analyze by each individual layer or as indicated	
Sampled By:	Alberto Fajardo Lic # 02-07292 - Richard Kuiters Lic #	Analyze all samples without 1st positive stop	
Date Sampled:	3 / 4 /2021	Stop after 1st positive for each homogeneous area	X

Sample #	Lab ID #	Floor/Level	Location (Room, Area, etc)	HA#	Description of Homogeneous Material (type, color, size, etc)	General Condition	Quantity	Estimated # of layers	Analysis Requested: PLM	PLM-NOB	TEM-NOB	Other Analysis	Notes and Comments
1 01		1st	Camden out floor	01	Roofing Debris	SD	T.O	layered			✓		(-) NAD
2 02		↓	↓ ↓	01	↓ ↓	↓	↓	↓			✓		↓
3 03			Back out the Flag	01							✓		(-) 0.36% CH
4 04		↓	↓ ↓	01	↓ ↓	↓	↓	↓			✓		↓ NAD
05		1st	SW Bathroom	02	Plaster Wh coat			2	✓				
06		↓	↓ ↓	03	Br	↓	↓	2	✓				
07				02	Wh			2	✓				
08				03	Br			2	✓				
09				02	Wh			2	✓				
10		↓	↓ ↓	03	Br	↓	↓	2	✓				

Relinquished By & Company:	A. Fajardo 02-07292	Received By Company	Marita Soriano
Date & Time		Date & Time:	3/6/21 11:00

Analyzed By: E. Loukianova
Date & Time: ELP 3.8.21

OMEGA ENVIRONMENTAL SERVICES, INC
280 Huyler Street South Hackensack, NJ 07606
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website www.omega-env.com Page 2 of 9 21-03-060

CHAIN OF CUSTODY/ANALYSIS REQUEST FOR ASBESTOS BULK SAMPLES

email results to: lab@omega-env.com and albertof@omega-env.com

Project Name:	PS&S	Turnaround Time Requested: 24Hours	
Project #:	21-1074	Total # of Samples: 20	
Site Location:	551 South Second Street, Camden, NJ 08103	Analyze by each individual layer or as indicated	
Sampled By:	Alberto Fajardo Lic # 02-07292 - Richard Kuiters Lic #	Analyze all samples without 1st positive stop	
Date Sampled:	3 / 4 /2021	Stop after 1st positive for each homogeneous area	X

Sample #	Lab ID #	Floor/Level	Location (Room, Area, etc)	HA#	Description of Homogeneous Material (type, color, size, etc)	General Condition	Quantity	Estimated # of layers	Analysis Requested: PLM	PLM-NOB	TEM-NOB	Other Analysis	Notes and Comments
5 11		1st	1st Offici	04	Floor Tile	SD	F.O	1			✓		(+)6.39% CH
6 12		↓	↓	04	↓ ↓	↓	↓	1			✓		NA
7 13		↓	↓	04	↓ ↓	↓	↓	1			✓		NA
14		↓	Boiler Room	05	Mortar	↓	↓	1	✓				10x5'x4"H
15		↓	↓ ↓	05	↓	↓	↓	1	✓				
16		↓	↓ ↓	05	↓	↓	↓	1	✓				
17		↓	↑ ↓	06	Brick	↓	↓	1	✓				
18		↓	↓ ↓	06	↓	↓	↓	1	✓				
19		↓	↓ ↓	06	↓	↓	↓	1	✓				
8 20		↓	T. Osite	07	Glazing	↓	↓	1			✓		(+)20.54% CH

Relinquished By & Company:	A. Fajardo 02-07292	Received By Company	Maritza Serrano
Date & Time		Date & Time:	3/6/21 11:00

Analyzed By: E. Loukiamov
Date & Time: Elp 3.8.21

OMEGA ENVIRONMENTAL SERVICES, INC
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website www.omega-env.com 21-03-060

CHAIN OF CUSTODY/ANALYSIS REQUEST FOR ASBESTOS BULK SAMPLES

email results to: lab@omega-env.com and albertof@omega-env.com

Project Name:	PS&S	Turnaround Time Requested: 24Hours	
Project #:	21-1074	Total # of Samples: 30	
Site Location:	551 South Second Street, Camden, NJ 08103	Analyze by each individual layer or as indicated	
Sampled By:	Alberto Fajardo Lic # 02-07292 - Richard Kuiters Lic #	Analyze all samples without 1st positive stop	
Date Sampled:	3 / 4 /2021	Stop after 1st positive for each homogeneous area	X

Sample #	Lab ID #	Floor/Level	Location (Room, Area, etc)	HA#	Description of Homogeneous Material (type, color, size, etc)	General Condition	Quantity	Estimated # of layers	Analysis Requested: PLM	PLM-NOB	TEM-NOB	Other Analysis	Notes and Comments
9 21		1st	outside Window	07	Glazing	SD	TO	1			✓		NA
10 22			↓	07	↓ ↓ ↓	↓	↓	1			✓		NA
23			Back Area	08	Insulation (wall)			1	✓				
24			↓ ↓	08	↓ ↓			1	✓				
25			↓ ↓	08	↓ ↓			1	✓				
26			Center Top	09	Wall Paint			1	✓				
27			↓ ↓ ↓	09	↓ ↓			1	✓				
28			↓ ↓ ↓	09	↓ ↓			1	✓				
29			↓ ↓ ↓	09	↓ ↓			1	✓				
30		↓	Exterior Wall	10	Caulking	↓	↓	1			✓		(-) NAD

Relinquished By & Company:	A. Fajardo 02-07292	Received By Company	Marita Simons
Date & Time		Date & Time:	3/4/21 11:00

Analyzed By: E. Loukianova
Date & Time: Elp 3.8.21

OMEGA ENVIRONMENTAL SERVICES, INC
280 Huyler Street South Hackensack, NJ 07606
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website www.omega-env.com 21-03-0610

CHAIN OF CUSTODY/ANALYSIS REQUEST FOR ASBESTOS BULK SAMPLES

email results to: lab@omega-env.com and albertof@omega-env.com

Project Name:	PS&S	Turnaround Time Requested: 24Hours	
Project #:	21-1074	Total # of Samples: 40	
Site Location:	551 South Second Street, Camden, NJ 08103	Analyze by each individual layer or as indicated	
Sampled By:	Alberto Fajardo Lic # 02-07292 - Richard Kulters Lic #	Analyze all samples without 1st positive stop	
Date Sampled:	3 / 4 /2021	Stop after 1st positive for each homogeneous area	X

Sample #	Lab ID #	Floor/Level	Location (Room, Area, etc)	HA#	Description of Homogeneous Material (type, color, size, etc)	General Condition	Quantity	Estimated # of layers	Analysis Requested: PLM	PLM-NOB	TEM-NOB	Other Analysis	Notes and Comments
12 31		1st	Exterior Window	10	Caulking	SD	T.O	1			✓		(-) ASB
13 32		↓	↓	10	↓	↓	↓	1			✓		↓
33		↓	Interior Wall	11	Interior Brick	↓	↓	↓	✓				
34		↓	↓	12	Brick Mortar	↓	↓	↓	✓				
35		↓	↓	11	Interior Brick	↓	↓	↓	✓				
36		↓	↓	12	Brick Mortar	↓	↓	↓	✓				
37		↓	↓	11	Interior Brick	↓	↓	↓	✓				
38		↓	↓	12	Brick Mortar	↓	↓	↓	✓				
39		↓	↓	11	Interior Brick	↓	↓	↓	✓				
40		↓	↓	12	Brick Mortar	↓	↓	↓	✓				

Relinquished By & Company:	A. Fajardo 02-07292	Received By Company	Monitor Sciences
Date & Time		Date & Time:	3/6/21 11:00

Analyzed By: E. Loukianova
Date & Time: 3.8.21

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CHAIN OF CUSTODY/ANALYSIS REQUEST FOR ASBESTOS BULK SAMPLES

email results to: lab@omega-env.com and albertof@omega-env.com

Project Name:	PS&S	Turnaround Time Requested: 24Hours	
Project #:	21-1074	Total # of Samples: 6	
Site Location:	551 South Second Street, Camden, NJ 08103	Analyze by each individual layer or as indicated	
Sampled By:	Alberto Fajardo Lic # 02-07292 - Richard Kuiters Lic #	Analyze all samples without 1st positive stop	
Date Sampled:	3 / 4 /2021	Stop after 1st positive for each homogeneous area	X

Sample #	Lab ID #	Floor/Level	Location (Room, Area, etc)	HA#	Description of Homogeneous Material (type, color, size, etc)	General Condition	Quantity	Estimated # of layers	Analysis Requested: PLM	PLM-NOB	TEM-NOB	Other Analysis	Notes and Comments
51		1st	Interior Wall	13	Interior CMU	SD	T.O.	1	✓				
52		↓	↓ ↓	14	CMU Mortar	↓	↓	1	✓				
14 53			Loose on the Floor	15	Flashing Debris	↓	↓	1			✓		(+) 6.03% CH NA
15 54			↓ ↓	16	↓ ↓	↓	↓	1			✓		
16 51			Back Area	16	Wire Wrapping	↓	↓	1			✓		(-) TR-CH, TR-Anth
17 56			↓ ↓	16	↓ ↓	↓	↓	1			✓		↓
18 57			Front Area	17	↓ ↓	↓	↓	1			✓		(-) NAD
19 58			↓ ↓	17	↓ ↓	↓	↓	1			✓		↓
59			↓ ↓	18	CMU Plaster	↓	↓	1	✓				
60			↓ ↓	18	↓ ↓	↓	↓	1	✓				

Relinquished By & Company:	A. Fajardo 02-07292	Received By Company	Monica Soriano
Date & Time		Date & Time:	3/6/21 11:00

Analyzed By: E. Loukianova
Date & Time: CLP 3.8.21

OMEGA ENVIRONMENTAL SERVICES, INC
280 Huyler Street South Hackensack, NJ 07606
T 201.489.8700 F 201.342.5412
website www.omega-env.com

CHAIN OF CUSTODY/ANALYSIS REQUEST FOR ASBESTOS BULK SAMPLES

email results to: lab@omega-env.com and albertof@omega-env.com

Project Name:	PS&S	Turnaround Time Requested: 24Hours	
Project #:	21-1074	Total # of Samples: 50	
Site Location:	551 South Second Street, Camden, NJ 08103	Analyze by each individual layer or as indicated	
Sampled By:	Alberto Fajardo Lic # 02-07292 - Richard Kuiters Lic #	Analyze all samples without 1st positive stop	
Date Sampled:	3 / 4 /2021	Stop after 1st positive for each homogeneous area	X

Sample #	Lab ID #	Floor/Level	Location (Room, Area, etc)	HA#	Description of Homogeneous Material (type, color, size, etc)	General Condition	Quantity	Estimated # of layers	Analysis Requested: PLM	PLM-NOB	TEM-NOB	Other Analysis	Notes and Comments
41		1st	Interior Wall	11	Interior Brick	SD	T.O	1	✓				
42				12	Brick Mortar			1	✓				
43				13	Interior CMU			1	✓				
44				14	CMU Mortar			1	✓				
45				13	Interior CMU			1	✓				
46				14	CMU Mortar			1	✓				
47				13	Interior CMU			1	✓				
48				14	CMU Mortar			1	✓				
49				13	Interior CMU			1	✓				
50				14	CMU Mortar			1	✓				

Relinquished By & Company:	A. Fajardo 02-07292	Received By Company	
Date & Time		Date & Time:	

Analyzed By:
Date & Time:

OMEGA ENVIRONMENTAL SERVICES, INC
280 Huyler Street South Hackensack, NJ 07606
T 201.489.8700 F 201.342.5412
website www.omega-env.com 21-03-060

CHAIN OF CUSTODY/ANALYSIS REQUEST FOR ASBESTOS BULK SAMPLES

email results to: lab@omega-env.com and albertof@omega-env.com

Project Name:	PS&S	Turnaround Time Requested: 24Hours	
Project #:	21-1074	Total # of Samples: 70	
Site Location:	551 South Second Street, Camden, NJ 08103	Analyze by each individual layer or as indicated	
Sampled By:	Alberto Fajardo Lic # 02-07292 - Richard Kuiters Lic #	Analyze all samples without 1st positive stop	
Date Sampled:	3 / 4 /2021	Stop after 1st positive for each homogeneous area	X

Sample #	Lab ID #	Floor/Level	Location (Room, Area, etc)	HA#	Description of Homogeneous Material (type, color, size, etc)	General Condition	Quantity	Estimated # of layers	Analysis Requested: PLM	PLM-NOB	TEM-NOB	Other Analysis	Notes and Comments
61		1ST	Front Area	18	CMU Plaster	SD	T.O	1	✓				
62			Center Area	19	Roof Underlayment			1	✓				
63				19				1	✓				
64				19				1	✓				
65				19				1	✓				
66				19				1	✓				
20 67			Back Area	20	Electrical liner			1			✓		(-) TR. CH
21 68				20				1			✓		↓ NAD
22 69				20				1			✓		
70				21	Electrical Panel Holder			1	✓				

Relinquished By & Company:	A. Fajardo 02-07292	Received By Company	Martha Soriano
Date & Time		Date & Time:	3/6/21 11:00

Analyzed By: E. Loukianova
Date & Time: Ehf 3.8.21

OMEGA ENVIRONMENTAL SERVICES, INC
280 Huyler Street South Hackensack, NJ 07606
T 201.489.8700 F 201.342.5412
website www.omega-env.com

CHAIN OF CUSTODY/ANALYSIS REQUEST FOR ASBESTOS BULK SAMPLES

email results to: lab@omega-env.com and albertof@omega-env.com

Project Name:	PS&S	Turnaround Time Requested: 24Hours	
Project #:	21-1074	Total # of Samples: 80	
Site Location:	551 South Second Street, Camden, NJ 08103	Analyze by each individual layer or as indicated	
Sampled By:	Alberto Fajardo Lic # 02-07292 - Richard Kuiters Lic #	Analyze all samples without 1st positive stop	
Date Sampled:	3 / 4 /2021	Stop after 1st positive for each homogeneous area	X

Sample #	Lab ID #	Floor/Level	Location (Room, Area, etc)	HA#	Description of Homogeneous Material (type, color, size, etc)	General Condition	Quantity	Estimated # of layers	Analysis Requested: PLM	PLM-NOB	TEM-NOB	Other Analysis	Notes and Comments
71		1ST	Back Area	21	Electrical Panel Hole	SD	T.O	1	✓				
72		↓	↓ ↓	21	↓ ↓	↓	↓	1	✓				
73			Front Area	22	Wall Insulation			1	✓				
74			↓ ↓	22	↓ ↓	↓	↓	1	✓				
75			↓ ↓	22	↓ ↓	↓	↓	1	✓				
76			Exterior Wall	23	Brick			1	✓				
77			↓ ↓	24	Mortar	↓	↓	1	✓				
78			↓ ↓	23	Brick			1	✓				
79			↓ ↓	24	Mortar			1	✓				
80		↓	↓ ↓	23	Brick	↓	↓	1	✓				

Relinquished By & Company:	A. Fajardo 02-07292	Received By Company	
Date & Time		Date & Time:	

Analyzed By:
Date & Time:

OMEGA ENVIRONMENTAL SERVICES, INC
280 Huyler Street South Hackensack, NJ 07606
T 201.489.8700 F 201.342.5412
website www.omega-env.com

CHAIN OF CUSTODY/ANALYSIS REQUEST FOR ASBESTOS BULK SAMPLES

email results to: lab@omega-env.com and albertof@omega-env.com

Project Name:	PS&S	Turnaround Time Requested: 24Hours	
Project #:	21-1074	Total # of Samples: 83	
Site Location:	551 South Second Street, Camden, NJ 08103	Analyze by each individual layer or as indicated	
Sampled By:	Alberto Fajardo Lic # 02-07292 - Richard Kuiters Lic #	Analyze all samples without 1st positive stop	
Date Sampled:	3 / 4 /2021	Stop after 1st positive for each homogeneous area	X

Sample #	Lab ID #	Floor/Level	Location (Room, Area, etc)	HA#	Description of Homogeneous Material (type, color, size, etc)	General Condition	Quantity	Estimated # of layers	Analysis Requested				Notes and Comments
									PLM	PLM-NOB	TEM-NOB	Other Analysis	
81		1st	Exterior Wall	24	Mortar	SD	TO	1	✓				
82		↓	↓	23	Brick	↓	↓	1	✓				
83		↓	↓	24	Mortar	↓	↓	1	✓				

Relinquished By & Company:	A. Fajardo 02-07292	Received By Company	
Date & Time		Date & Time:	

Analyzed By:
Date & Time:

B. PCBs

B1. Laboratory Analytical Reports

Accredited Analytical Resources, LLC.

12 March 2021

AAR Work Order: 2100327

David Ekstrand
OMEGA ENVIRONMENTAL SERVICES
280 Huyler Street
South Hackensack, NJ 07606
Project: 21-1074 PS&S

Enclosed are the results of analyses for samples received by the laboratory on 03/08/2021 14:42. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Daniel Miguel
Technical Director

New Jersey Certification Number: 12007
New York Certification Number: 11109
Pennsylvania Certification Number: 68-02799
CT Certification Number: PH-0219

Accredited Analytical Resources, LLC.

OMEGA ENVIRONMENTAL SERVICES		
280 Huyler Street	Project: 21-1074 PS&S	**Reported:**
South Hackensack NJ, 07606	Project Manager: David Ekstrand	03/12/2021 08:49

Analytical Report for Samples

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
1074-P1	2100327-01	Caulk	03/01/2021 00:00	03/08/2021 14:42
1074-P2	2100327-02	Caulk	03/01/2021 00:00	03/08/2021 14:42
1074-P3	2100327-03	Caulk	03/01/2021 00:00	03/08/2021 14:42

Notes and Definitions

* Values outside of QC limits
ND - Indicates compound analyzed for but not detected at or above the MDL
J - Indicates estimated value for TICs and all results when detected below the RL
B - Indicates compound found in associated blank
E - Concentration exceeds highest calibration standard
D - Indicates result is based on a dilution
P - Greater than 25% diff. between 2 GC columns.
MDL - Minimum detection limit
RL - Reporting limit
NFL - No Free Liquids
VC - The container(s) provided by the client for soil volatiles do not meet the requirements of EPA SW846-5035A. Results reported below 200 ug/kg may be biased low due to samples not being collected according to EPA SW846 5035A requirements.

Methodology Summary

PCB by EPA Method SW846 8082:
8082A

Wet Chemistry:
Percent Solids by SM 2540 G

Accredited Analytical Resources LLC

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Daniel Miguel, Technical Director

Accredited Analytical Resources, LLC.

OMEGA ENVIRONMENTAL SERVICES		
280 Huyler Street	Project: 21-1074 PS&S	**Reported:**
South Hackensack NJ, 07606	Project Manager: David Ekstrand	03/12/2021 08:49

Condition of Samples on Receipt

Temperature °C	5.00
Chain of Custody Filled Out Properly	Yes
Received with Proper Containers	Yes
Received with Proper Volumes	Yes
Received Within Holding Time	Yes
Samples Received with Correct Preservation	Yes
Samples Received On Ice	Yes
Sample Received Via Field Services	No
Samples Hand Delivered	Yes

Accredited Analytical Resources LLC

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Daniel Miguel, Technical Director

Accredited Analytical Resources, LLC.

OMEGA ENVIRONMENTAL SERVICES		
280 Huyler Street	Project: 21-1074 PS&S	**Reported:**
South Hackensack NJ, 07606	Project Manager: David Ekstrand	03/12/2021 08:49

Client ID: 1074-P1

Lab ID: 2100327-01 (Caulk)

CAS #	Analyte	Result	MDL	RL	Units	Dilution	Prepared Date	Analyzed Date/By	Method	Notes
Accredited Analytical Resources LLC										
PCB by EPA Method SW846 8082A										
Sample Prepared by Method:EPA 3540C										
12674-11-2	Aroclor-1016	ND	166	333	ug/kg dry	1	03/09/21 08:26	03/10/21 13:25/JAM	EPA 8082A	
11104-28-2	Aroclor-1221	ND	166	333	ug/kg dry	1	03/09/21 08:26	03/10/21 13:25/JAM	EPA 8082A	
11141-16-5	Aroclor-1232	ND	166	333	ug/kg dry	1	03/09/21 08:26	03/10/21 13:25/JAM	EPA 8082A	
53469-21-9	Aroclor-1242	ND	166	333	ug/kg dry	1	03/09/21 08:26	03/10/21 13:25/JAM	EPA 8082A	
12672-29-6	Aroclor-1248	ND	166	333	ug/kg dry	1	03/09/21 08:26	03/10/21 13:25/JAM	EPA 8082A	
11097-69-1	**Aroclor-1254**	**4090**	166	333	ug/kg dry	1	03/09/21 08:26	03/10/21 13:25/JAM	EPA 8082A	
11096-82-5	**Aroclor-1260**	**3050**	166	333	ug/kg dry	1	03/09/21 08:26	03/10/21 13:25/JAM	EPA 8082A	
37324-23-5	Aroclor-1262	ND	166	333	ug/kg dry	1	03/09/21 08:26	03/10/21 13:25/JAM	EPA 8082A	
11100-14-4	Aroclor-1268	ND	166	333	ug/kg dry	1	03/09/21 08:26	03/10/21 13:25/JAM	EPA 8082A	
Surrogate: Tetrachloro-m-xylene				*70.4 %*	*10-133*		*03/09/21 08:26*	*03/10/21 13:25/JAM*	*EPA 8082A*	
Surrogate: Tetrachloro-m-xylene				*72.4 %*	*10-150*		*03/09/21 08:26*	*03/10/21 13:25/JAM*	*EPA 8082A*	
Surrogate: Decachlorobiphenyl				*66.4 %*	*10-135*		*03/09/21 08:26*	*03/10/21 13:25/JAM*	*EPA 8082A*	
Surrogate: Decachlorobiphenyl				*78.7 %*	*10-145*		*03/09/21 08:26*	*03/10/21 13:25/JAM*	*EPA 8082A*	
Wet Chemistry										
Sample Prepared by Method:Percent Solids										
NA	**Percent Solids**	**100**	0.100	0.100	%	1	03/09/21 08:41	03/10/21 09:40/NDN	SM 2540 G	

Accredited Analytical Resources LLC

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Daniel Miguel, Technical Director

Accredited Analytical Resources, LLC.

OMEGA ENVIRONMENTAL SERVICES		
280 Huyler Street	Project: 21-1074 PS&S	**Reported:**
South Hackensack NJ, 07606	Project Manager: David Ekstrand	03/12/2021 08:49

Client ID: 1074-P2

Lab ID: 2100327-02 (Caulk)

CAS #	Analyte	Result	MDL	RL	Units	Dilution	Prepared Date	Analyzed Date/By	Method	Notes
Accredited Analytical Resources LLC										
PCB by EPA Method SW846 8082A										
Sample Prepared by Method:EPA 3540C										
12674-11-2	Aroclor-1016	ND	166	333	ug/kg dry	1	03/09/21 08:26	03/10/21 13:47/JAM	EPA 8082A	
11104-28-2	Aroclor-1221	ND	166	333	ug/kg dry	1	03/09/21 08:26	03/10/21 13:47/JAM	EPA 8082A	
11141-16-5	Aroclor-1232	ND	166	333	ug/kg dry	1	03/09/21 08:26	03/10/21 13:47/JAM	EPA 8082A	
53469-21-9	Aroclor-1242	ND	166	333	ug/kg dry	1	03/09/21 08:26	03/10/21 13:47/JAM	EPA 8082A	
12672-29-6	Aroclor-1248	ND	166	333	ug/kg dry	1	03/09/21 08:26	03/10/21 13:47/JAM	EPA 8082A	
11097-69-1	**Aroclor-1254**	**762**	166	333	ug/kg dry	1	03/09/21 08:26	03/10/21 13:47/JAM	EPA 8082A	
11096-82-5	**Aroclor-1260**	**438**	166	333	ug/kg dry	1	03/09/21 08:26	03/10/21 13:47/JAM	EPA 8082A	
37324-23-5	Aroclor-1262	ND	166	333	ug/kg dry	1	03/09/21 08:26	03/10/21 13:47/JAM	EPA 8082A	
11100-14-4	Aroclor-1268	ND	166	333	ug/kg dry	1	03/09/21 08:26	03/10/21 13:47/JAM	EPA 8082A	
Surrogate: Tetrachloro-m-xylene				*69.1 %*	*10-133*		*03/09/21 08:26*	*03/10/21 13:47/JAM*	*EPA 8082A*	
Surrogate: Tetrachloro-m-xylene				*82.1 %*	*10-150*		*03/09/21 08:26*	*03/10/21 13:47/JAM*	*EPA 8082A*	
Surrogate: Decachlorobiphenyl				*65.2 %*	*10-135*		*03/09/21 08:26*	*03/10/21 13:47/JAM*	*EPA 8082A*	
Surrogate: Decachlorobiphenyl				*72.9 %*	*10-145*		*03/09/21 08:26*	*03/10/21 13:47/JAM*	*EPA 8082A*	
Wet Chemistry										
Sample Prepared by Method:Percent Solids										
NA	**Percent Solids**	**100**	0.100	0.100	%	1	03/09/21 08:41	03/10/21 09:46/NDN	SM 2540 G	

Accredited Analytical Resources LLC

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Daniel Miguel, Technical Director

Accredited Analytical Resources, LLC.

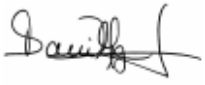
OMEGA ENVIRONMENTAL SERVICES		
280 Huyler Street	Project: 21-1074 PS&S	**Reported:**
South Hackensack NJ, 07606	Project Manager: David Ekstrand	03/12/2021 08:49

Client ID: 1074-P3

Lab ID: 2100327-03 (Caulk)

CAS #	Analyte	Result	MDL	RL	Units	Dilution	Prepared Date	Analyzed Date/By	Method	Notes
				Accredited Analytical Resources LLC						
PCB by EPA Method SW846 8082A										
Sample Prepared by Method:EPA 3540C										
12674-11-2	Aroclor-1016	ND	166	333	ug/kg dry	1	03/09/21 08:26	03/10/21 14:10/JAM	EPA 8082A	
11104-28-2	Aroclor-1221	ND	166	333	ug/kg dry	1	03/09/21 08:26	03/10/21 14:10/JAM	EPA 8082A	
11141-16-5	Aroclor-1232	ND	166	333	ug/kg dry	1	03/09/21 08:26	03/10/21 14:10/JAM	EPA 8082A	
53469-21-9	Aroclor-1242	ND	166	333	ug/kg dry	1	03/09/21 08:26	03/10/21 14:10/JAM	EPA 8082A	
12672-29-6	Aroclor-1248	ND	166	333	ug/kg dry	1	03/09/21 08:26	03/10/21 14:10/JAM	EPA 8082A	
11097-69-1	**Aroclor-1254**	**787**	166	333	ug/kg dry	1	03/09/21 08:26	03/10/21 14:10/JAM	EPA 8082A	
11096-82-5	**Aroclor-1260**	**308**	166	333	ug/kg dry	1	03/09/21 08:26	03/10/21 14:10/JAM	EPA 8082A	J
37324-23-5	Aroclor-1262	ND	166	333	ug/kg dry	1	03/09/21 08:26	03/10/21 14:10/JAM	EPA 8082A	
11100-14-4	Aroclor-1268	ND	166	333	ug/kg dry	1	03/09/21 08:26	03/10/21 14:10/JAM	EPA 8082A	
Surrogate: Tetrachloro-m-xylene				*63.1 %*	*10-133*		*03/09/21 08:26*	*03/10/21 14:10/JAM*	*EPA 8082A*	
Surrogate: Tetrachloro-m-xylene				*50.1 %*	*10-150*		*03/09/21 08:26*	*03/10/21 14:10/JAM*	*EPA 8082A*	
Surrogate: Decachlorobiphenyl				*50.9 %*	*10-135*		*03/09/21 08:26*	*03/10/21 14:10/JAM*	*EPA 8082A*	
Surrogate: Decachlorobiphenyl				*61.9 %*	*10-145*		*03/09/21 08:26*	*03/10/21 14:10/JAM*	*EPA 8082A*	
Wet Chemistry										
Sample Prepared by Method:Percent Solids										
NA	**Percent Solids**	**100**	0.100	0.100	%	1	03/09/21 08:41	03/10/21 09:40/NIN	SM 2540 G	

Accredited Analytical Resources LLC



Daniel Miguel, Technical Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Page 1 of ___

CHAIN OF CUSTODY FORM

Accredited Analytical Resources, LLC.
20 PERSHING AVE, CARTERET, NJ 07008
Tel. 732-969-6112 FAX 732-541-1383
WEB: WWW.ACCREDITEDANALYTICAL.COM

CLIENT NAME:	OMEGA ENV.
ADDRESS:	280 HUYLER ST.
CITY:	S. HACKENSACK
STATE:	NJ ZIP: 07606

STATE AGENCY (CIRCLE ONE)	(NJ) NY PA
PROJECT NAME:	P 21-1074 PSEG
CONTACT:	DAVID EKSTRAND
OFFICE PHONE #:	201-489-8700
OFFICE FAX #:	
INITIAL RESULTS TO:	LAB@OMEGA-ENV.COM
EMAIL FOR INVOICE:	

AAR QUOTE #:
AAR WORK ORDER #: 2100327
P.O. #:

ANALYSIS

PRES. CODE → X
CONT. CODE → P

COLLECTION INFORMATION

CUSTOMER SAMPLE # / ID	DATE / TIME SAMPLED	MATRIX CODE	DEPTH	# OF CONTAINERS	CONTAINER TYPE	PCB IN CAULK	AAR SAMPLE #
1074-P1	3/1	X		1	G	X	-01
1074-P2	3/1	X		1	G	X	-02
1074-P3	3/1	X		1	G	X	-03

MATRIX CODES: S = SOIL A = AQUEOUS GW = GROUND WATER WW = WASTE WATER SW = SURFACE WATER P = POTABLE WATER O = OIL K = SOLID X = OTHER CAULK
CONTAINER TYPE CODES: G = GLASS P = PLASTIC E = ENCORE PRESERVATIVES CODES: 1 = HCL 2 = HNO_3 3 = H_2SO_4 4 = NaOH 5 = OTHER ____

TURNAROUND TIME (CIRCLE ONE): STANDARD (5 DAY) 72 HRS. 48 HRS. 24 HRS. OTHER ____
(IF BLANK STANDARD WILL APPLY)

REPORT TYPE: RESULTS ONLY X REDUCED ____ FULL ____ EDD ____ EXCEL SPREADSHEET ____

COMMENTS:

COOLER TEMP: 3°C

PERSON(S) ASSUMING RESPONSIBILITY FOR SAMPLING: PRINT: SIGN:

SIGN BELOW WHEN DELIVERING SAMPLES. EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY, CUSTODY MUST BE DOCUMENTED

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Print Name: DAVID EKSTRAND	Print Name: DMigel	Print Name:	Print Name:
Signature: D-S	Signature:	Signature:	Signature:
Agent of: OMEGA	Agent of: AAR	Agent of:	Agent of:
Date Received: 03/08/21	Time: 14:42	Date Received: / /	Time:
RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Print Name:	Print Name:	Print Name:	Print Name:
Signature:	Signature:	Signature:	Signature:
Agent of:	Agent of:	Agent of:	Agent of:
Date Received: / /	Time:	Date Received: / /	Time:

Page 7 of 7

C. XRF

C1. Laboratory Analytical Reports

Company	Heuresis Corp.
Model	Pb200i
Type	XRF Lead Paint Analyzer
Serial Num.	2857
App Version	Pb200i-4.1-11

Job Id	Reading #	Concentration	Units	Result	Calibration Reading	Date	User	Analytic Mode	Work Order Number	LOCATION	Area (Non-NYCHA)	Non-NYCHA Components	-->Member (Non-NYCHA)	Wall (side)	Substrate	Color	Paint Condition	Notes
3040953	7797	1	mg/cm2		TRUE	3/4/2021	Elena Garcia	Lead Paint										
3040953	7798	1	mg/cm2		TRUE	3/4/2021	Elena Garcia	Lead Paint										
3040953	7799	1	mg/cm2		TRUE	3/4/2021	Elena Garcia	Lead Paint										
3040953	7800	0	mg/cm2		TRUE	3/4/2021	Elena Garcia	Lead Paint										
3040953	7801	-0.1	mg/cm2		TRUE	3/4/2021	Elena Garcia	Lead Paint										
3040953	7802	-0.1	mg/cm2		TRUE	3/4/2021	Elena Garcia	Lead Paint										
3040953	7803	0	mg/cm2	Negative	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Room	Wall	A	BRICK	WHITE	Deteriorated	area A
3040953	7804	0	mg/cm2	Negative	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Room	Wall	A	BRICK	WHITE	Deteriorated	area A
3040953	7805	1.3	mg/cm2	Positive	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Room	Wall	B	BRICK	WHITE	Deteriorated	area A
3040953	7806	1.5	mg/cm2	Positive	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Room	Wall	B	BRICK	WHITE	Deteriorated	area A
3040953	7807	1.2	mg/cm2	Positive	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Room	Wall	B	BRICK	WHITE	Deteriorated	area A
3040953	7808	3.5	mg/cm2	Positive	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Room	Wall	B	CINDERBLOCK	WHITE	Deteriorated	area A
3040953	7809	11	mg/cm2	Positive	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Room	Wall	B	CINDERBLOCK	WHITE	Deteriorated	area A
3040953	7810	1.7	mg/cm2	Positive	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Room	Wall	D	BRICK	WHITE	Deteriorated	area A
3040953	7811	1.5	mg/cm2	Positive	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Room	Wall	D	BRICK	WHITE	Deteriorated	area A
3040953	7812	0.4	mg/cm2	Negative	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Room	Wall	D	BRICK	WHITE	Deteriorated	area A
3040953	7813	1	mg/cm2	Positive	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Room	Wall	C	BRICK	WHITE	Deteriorated	area A
3040953	7814	1.1	mg/cm2	Positive	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Room	Wall	C	BRICK	WHITE	Deteriorated	area A
3040953	7815	1.3	mg/cm2	Positive	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Room	Wall	C	BRICK	WHITE	Deteriorated	area A
3040953	7816	0.9	mg/cm2	Negative	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Room	Wall	B	BRICK	WHITE	Deteriorated	area B
3040953	7817	1.3	mg/cm2	Positive	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Room	Wall	B	BRICK	WHITE	Deteriorated	area B
3040953	7818	2.3	mg/cm2	Positive	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Room	Wall	B	CINDERBLOCK	WHITE	Deteriorated	area B
3040953	7819	2	mg/cm2	Positive	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Room	Wall	B	CINDERBLOCK	WHITE	Deteriorated	area B
3040953	7820	1.9	mg/cm2	Positive	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Room	Wall	B	CINDERBLOCK	WHITE	Deteriorated	area B
3040953	7821	2.2	mg/cm2	Positive	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Room	Wall	A	CINDERBLOCK	WHITE	Deteriorated	area B
3040953	7822	1.8	mg/cm2	Positive	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Room	Wall	A	CINDERBLOCK	WHITE	Deteriorated	area B
3040953	7823	1.4	mg/cm2	Positive	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Room	Wall	B	CINDERBLOCK	BLUE	Deteriorated	area B
3040953	7824	3.5	mg/cm2	Positive	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Window	Window Frame	B	CINDERBLOCK	BLUE	Deteriorated	area B
3040953	7825	3.2	mg/cm2	Positive	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Window	Window Frame	B	WOOD	BLUE	Deteriorated	area B
3040953	7826	4	mg/cm2	Positive	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Window	Window Frame	B	WOOD	BLUE	Deteriorated	area B
3040953	7827	0.1	mg/cm2	Negative	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Window	Window Frame	D	CINDERBLOCK	WHITE	Deteriorated	area B
3040953	7828	0.1	mg/cm2	Negative	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Window	Window Frame	D	CINDERBLOCK	WHITE	Deteriorated	area B
3040953	7829	2.8	mg/cm2	Positive	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Window	Window Frame	D	CINDERBLOCK	WHITE	Deteriorated	area B
3040953	7830	3.3	mg/cm2	Positive	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Window	Window Frame	C	CINDERBLOCK	WHITE	Deteriorated	area B
3040953	7831	3.1	mg/cm2	Positive	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Window	Window Frame	C	CINDERBLOCK	WHITE	Deteriorated	area B
3040953	7832	-0.1	mg/cm2	Negative	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Pipe	Vertical Pipe	C	METAL	WHITE	Deteriorated	area B
3040953	7833	1	mg/cm2	Positive	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Pipe	Vertical Pipe	C	METAL	WHITE	Deteriorated	area B
3040953	7834	0.2	mg/cm2	Negative	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Room	Wall	D	WOOD	WHITE	Deteriorated	area B
3040953	7835	2.8	mg/cm2	Positive	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Room	Wall	C	WOOD	WHITE	Deteriorated	area B
3040953	7836	-0.1	mg/cm2	Negative	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Room	Wall	B	WOOD	WHITE	Deteriorated	area B
3040953	7837	0	mg/cm2	Negative	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Room	Wall	A	CINDERBLOCK	WHITE	Deteriorated	area C
3040953	7838	-0.2	mg/cm2	Negative	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Room	Wall	A	CINDERBLOCK	RED	Deteriorated	area C
3040953	7839	-0.1	mg/cm2	Negative	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Room	Wall	D	CINDERBLOCK	RED	Deteriorated	area C
3040953	7840	0.1	mg/cm2	Negative	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Room	Wall	D	BRICK	RED	Deteriorated	area C
3040953	7841	-0.2	mg/cm2	Negative	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Room	Wall	D	CINDERBLOCK	RED	Deteriorated	area C
3040953	7842	5.7	mg/cm2	Positive	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Room	Wall	C	CINDERBLOCK	WHITE	Deteriorated	area C
3040953	7843	3.8	mg/cm2	Positive	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Room	Wall	C	CINDERBLOCK	WHITE	Deteriorated	area C
3040953	7844	2.7	mg/cm2	Positive	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Door		C	WOOD	WHITE	Deteriorated	area C
3040953	7845	3.2	mg/cm2	Positive	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Door	Door Frame	C	WOOD	GREEN	Deteriorated	area C
3040953	7846	2.3	mg/cm2	Positive	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Room	Wall	B	CINDERBLOCK	WHITE	Deteriorated	area C
3040953	7847	1.6	mg/cm2	Positive	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Room	Wall	B	CINDERBLOCK	WHITE	Deteriorated	area C
3040953	7848	0.1	mg/cm2	Negative	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Room	Wall	B	CINDERBLOCK	RED	Deteriorated	area C
3040953	7849	9.6	mg/cm2	Positive	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Door		B	METAL	WHITE	Deteriorated	area A
3040953	7850	10.6	mg/cm2	Positive	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Door		B	METAL	WHITE	Deteriorated	area A
3040953	7851	-0.6	mg/cm2	Negative	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Stair		C	WOOD	WHITE	Deteriorated	area C
3040953	7852	-0.1	mg/cm2	Negative	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Stair	Staircase Railing	C	WOOD	WHITE	Deteriorated	area C
3040953	7853	5.5	mg/cm2	Positive	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Room	Wall	Ceiling	CINDERBLOCK	BROWN	Deteriorated	exterior south
3040953	7854	-0.1	mg/cm2	Negative	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Room	Wall	Ceiling	CINDERBLOCK	BROWN	Deteriorated	exterior south
3040953	7855	-0.1	mg/cm2	Negative	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Room	Wall	Ceiling	CINDERBLOCK	BROWN	Deteriorated	exterior south
3040953	7856	1.9	mg/cm2	Positive	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Room	Wall	A	PLASTER	GREEN	Deteriorated	bathroom
3040953	7857	1.5	mg/cm2	Positive	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Room	Wall	A	PLASTER	GREEN	Deteriorated	bathroom
3040953	7858	0	mg/cm2	Negative	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Room	Wall	B	PLASTER	GREEN	Deteriorated	bathroom
3040953	7859	1.6	mg/cm2	Positive	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Room	Wall	D	CINDERBLOCK	GREEN	Deteriorated	bathroom
3040953	7860	2.3	mg/cm2	Positive	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Room	Wall	D	CINDERBLOCK	GREEN	Deteriorated	bathroom
3040953	7861	2.8	mg/cm2	Positive	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Door		D	CINDERBLOCK	GREEN	Deteriorated	bathroom
3040953	7862	3.5	mg/cm2	Positive	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Door	Door Frame	A	WOOD	GREEN	Deteriorated	bathroom
3040953	7863	7.1	mg/cm2	Positive	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Door		A	WOOD	GREEN	Deteriorated	bathroom
3040953	7864	0.1	mg/cm2	Negative	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Room	Floor	Center	CONCRETE	GREY	Deteriorated	
3040953	7865	0.2	mg/cm2	Negative	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Room	Floor	Center	CONCRETE	GREY	Deteriorated	
3040953	7866	0	mg/cm2	Negative	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Room		Center	METAL	WHITE	Deteriorated	boiler
3040953	7867	0.1	mg/cm2	Negative	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Room	Wall	C	CINDERBLOCK	WHITE	Deteriorated	areaC
3040953	7868	0.2	mg/cm2	Negative	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Room	Wall	C	CINDERBLOCK	WHITE	Deteriorated	area A
3040953	7869	2.2	mg/cm2	Positive	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Room		Center	METAL	YELLLOW	Deteriorated	column
3040953	7870	2.5	mg/cm2	Positive	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Room		Center	METAL	YELLLOW	Deteriorated	column
3040953	7871	3.2	mg/cm2	Positive	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Room		Center	METAL	YELLLOW	Deteriorated	column
3040953	7872	-0.1	mg/cm2	Negative	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Electrical	Electrical Conduit	Center	METAL	YELLLOW	Deteriorated	
3040953	7873	-0.1	mg/cm2	Negative	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Electrical	Electrical Conduit	Center	METAL	YELLLOW	Deteriorated	
3040953	7874	3	mg/cm2	Positive	FALSE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Fire Escape	Fire Escape Stairs	B	METAL	BLACK	Deteriorated	
3040953	7875	0.9	mg/cm2		TRUE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Fire Escape	Fire Escape Stairs	B	METAL	BLACK	Deteriorated	
3040953	7876	0.9	mg/cm2		TRUE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Fire Escape	Fire Escape Stairs	B	METAL	BLACK	Deteriorated	
3040953	7877	0.9	mg/cm2		TRUE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Fire Escape	Fire Escape Stairs	B	METAL	BLACK	Deteriorated	
3040953	7878	0	mg/cm2		TRUE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Fire Escape	Fire Escape Stairs	B	METAL	BLACK	Deteriorated	
3040953	7879	0	mg/cm2		TRUE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Fire Escape	Fire Escape Stairs	B	METAL	BLACK	Deteriorated	
3040953	7880	-0.1	mg/cm2		TRUE	3/4/2021	Elena Garcia	Lead Paint	211074	555 south second street	open area 1st loor	Fire Escape	Fire Escape Stairs	B	METAL	BLACK	Deteriorated	

United States Environmental Protection Agency

This is to certify that

Omega Environmental Services, Inc.

has fulfilled the requirements of the Toxic Substances Control Act (TSCA) Section 402, and has received certification to conduct lead-based paint activities pursuant to 40 CFR Part 745.226

In the Jurisdiction of:

All EPA Administered Lead-based Paint Activities Program States, Tribes and Territories

This certification is valid from the date of issuance and expires November 16, 2022

LBP-10722-2
Certification #

May 16, 2019
Issued On

Michelle Price

Michelle Price, Chief
Lead, Heavy Metals, and Inorganics Branch

New York State – Department of Labor
Division of Safety and Health
License and Certificate Unit
State Campus, Building 12
Albany, NY 12240

ASBESTOS HANDLING LICENSE

Omega Laboratories, Inc.

280 Huyler Street

S. Hackensack, NJ 07606

FILE NUMBER: 99-0200
LICENSE NUMBER: 29673
LICENSE CLASS: RESTRICTED
DATE OF ISSUE: 03/19/2021
EXPIRATION DATE: 03/31/2022

Duly Authorized Representative – Gary Mellor:

This license has been issued in accordance with applicable provisions of Article 30 of the Labor Law of New York State and of the New York State Codes, Rules and Regulations (12 NYCRR Part 56). It is subject to suspension or revocation for a (1) serious violation of state, federal or local laws with regard to the conduct of an asbestos project, or (2) demonstrated lack of responsibility in the conduct of any job involving asbestos or asbestos material.

This license is valid only for the contractor named above and this license or a photocopy must be prominently displayed at the asbestos project worksite. This license verifies that all persons employed by the licensee on an asbestos project in New York State have been issued an Asbestos Certificate, appropriate for the type of work they perform, by the New York State Department of Labor.

Amy Phillips, Director
For the Commissioner of Labor

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