PRE-BID SITE VISIT SCHEDULED

ON JUNE 5, 2026
SEE ADVERTISEMENT FOR BIDS INSIDE

PROJECT MANUAL

PROJECT NO. 47510 - C

CONSTRUCTION WORK

PROVIDE STORAGE BUILDING,
DOT REGION 5, ERIE COUNTY
75 EVANS ST
HAMBURG, NY

02/04/2026

KATHY HOCHUL
Governor

JEANETTE M. MOY
Commissioner

NEW YORK STATE | Office of General Services

PROJECT NO. 47510 -C

CONSTRUCTION WORK

PROVIDE STORAGE BUILDING,
DOT REGION 5, ERIE COUNTY
75 EVANS ST
HAMBURG, NY

FEBRUARY 4TH , 2026

CLIENT: NYS DEPARTMENT OF TRANSPORTATION

PROJECT TEAM LEADER: MICHAEL MCCULLEN

PREPARED BY

Architectural Resources
505 Franklin Street
Buffalo, NY 14202
Certificate of Authorization- 1127432

Spring Line Design Architecture +
Engineering, 73 Troy Rd, East
Greenbush, NY 12061
Certificate of Authorization - 022677

Popli Design Group
450 West Kirkpatrick Street |
Syracuse, NY 13204
Certificate of Authorization – 021331

PREPARED FOR

State of New York
Office of General Services
35th Floor, Corning Tower
The Governor Nelson A. Rockefeller
Empire State Plaza
Albany, NY 12242
Phone (518) 474-0203
FAX (518) 473-7862

Affix Seal	Affix Seal	Affix Seal
REGISTERED ARCHITECT KEVIN D. MURRETT 015981 STATE OF NEW YORK	STATE OF NEW YORK CHRISTOPHER D. SNYDER LICENSED PROFESSIONAL ENGINEER	STATE OF NEW YORK GRETCHEN M BeVARD 095850 LICENSED PROFESSIONAL ENGINEER
12/31/2026	11/30/2028	12/31/2027
Registration Expiration Date	Registration Expiration Date	Registration Expiration Date

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A. The Contract Drawings, which accompany this Project Manual and form a part of the Contract Documents, are listed on the Title Sheet of the Drawings.

B. The drawings for related contracts are listed on the Title Sheet for reference only. Examine the drawings for related contracts to ascertain the relationship of the Work to the related contracts.

END OF LIST

ADVERTISEMENT FOR BIDS

Sealed bids for Project Nos. 47510-C, 47510-H, 47510-P, and 47510-E, comprising separate contracts for Construction Work, HVAC Work, Plumbing Work, and Electrical Work, Provide Storage Building, DOT Region 5, Erie County, 75 Evans St, Hamburg, (Erie County), NY, will be received by the Office of General Services (OGS), Design & Construction Group (D&C), Division of Contract Management, 35th Fl., Corning Tower, Empire State Plaza, Albany, NY 12242, on behalf of the Department of Transportation, until 2:00 p.m. on Wednesday, June 17, 2026, when they will be publicly opened and read. Each bid must be prepared and submitted in accordance with the Instructions to Bidders and must be accompanied by a bid security (i.e. certified check, bank check, or bid bond in the amount of $81,100 for C, $17,200 for H, $15,000 for P, and $26,300 for E).

All successful bidders will be required to furnish a Performance Bond and a Labor and Material Bond pursuant to Sections 136 and 137 of the State Finance Law, each for 100% of the amount of the Contract estimated to be between $2,000,000 and $3,000,000 for C, between $100,000 and $250,000 for H, between $100,000 and $250,000 for P, and between $500,000 and $1,000,000 for E.

Pursuant to State Finance Law §§139-j and 139-k, this solicitation includes and imposes certain restrictions on communications between OGS D&C and a bidder during the procurement process. A bidder is restricted from making contacts from the earliest posting on the OGS website, in a newspaper of general circulation, or in the Contract Reporter, of written notice, advertisement or solicitation of offers, through final award and approval of the contract by OGS D&C and the Office of the State Comptroller ("Restricted Period") to other than designated staff, unless it is a contact that is included among certain statutory exceptions set forth in State Finance Law §139-j(3)(a). Designated staff are Megan Whaley, Catherine Skaczkowski, Jessica Hoffman, and Pierre Alric in the Division of Contract Management, telephone (518) 474-0203, fax (518) 473-7862. OGS D&C employees are also required to obtain certain information when contacted during the restricted period and to make a determination of the responsibility of the bidder pursuant to these two statutes. Certain findings of non-responsibility can result in rejection for contract award and in the event of two findings within a four-year period, the bidder is debarred from obtaining governmental Procurement Contracts. Bidders responding to this Advertisement must familiarize themselves with the State Finance Law requirements and will be expected to affirm that they understand and agree to comply on the bid form. Further information about these requirements can be found within the project manual or at: **https://ogs.ny.gov/ACPL/**

Pursuant to Public Buildings Law § 8(6), effective January 11, 2020, for any projects where the project design commenced on or after January 1, 2020 and for any contracts over $5,000 for the work of construction, reconstruction, alteration, repair, or improvement of any State building, a responsible and reliable NYS-certified Minority or Women-Owned Business Enterprise that submits a bid within ten percent of the lowest bid will be deemed the apparent low bidder provided that the bid is $1,737,918 or less, adjusted annually for inflation as of March 1, 2026. If more than one responsible and reliable MWBE firm meets these requirements, the MWBE firm with the lowest bid will be deemed the apparent low bidder.

___ Project commenced design before January 1, 2020. Not subject to provision.
XX Project commenced design on or after January 1, 2020. Subject to provision.

The substantial completion date for this project is 525 days after the Agreement is approved by the Comptroller.

The only time prospective bidders will be allowed to visit the job site to take field measurements and examine existing conditions of the project area will be at 9:00 a.m. on June 5, 2026, at DOT Sign Shop,75 Evans St, Hamburg, NY. Prospective bidders are urged, but not mandated, to visit the site at this time. Prospective bidders or their representatives attending the pre-bid site visit will not be admitted on facility grounds without proper photo identification. Note that parking restrictions and security provisions will apply, and all vehicles will be subject to search. Refer to Document 002218 for any additional requirements for attendance at the pre-bid site visit.

Phone the office of Vicki Thielges, (585-658-2900) a minimum of 48 hours in advance of the date to provide the names of those who will attend the pre-bid site visit. Only contractors that schedule a visit at least 48 hours in advance will be allowed to participate in the pre-bid site visit.

Pursuant to New York State Executive Law Article 15-A and the rules and regulations promulgated thereunder, OGS is required to promote opportunities for the maximum feasible participation of New York State-certified Minority and Women-owned Business Enterprises ("MWBEs") and the employment of minority group members and women in the performance of OGS contracts. All bidders are expected to cooperate in implementing this policy. OGS hereby establishes an overall goal of 30% for MWBE participation, 15% for Minority-Owned Business Enterprises ("MBE") participation and 15% for Women-Owned Business Enterprises ("WBE") participation (based on the current availability of qualified MBEs and WBEs). The total contract goal can be obtained by utilizing any combination of MBE and /or WBE participation for subcontracting and supplies acquired under this Contract. Trades with 0% goals are encouraged to make "good faith efforts" to promote and assist in the participation of MWBEs on the Contract for the provision of services and materials.

Article 3 of the Veteran's Services Law provides for more meaningful participation in public procurement by certified Service-Disabled Veteran-Owned Businesses ("SDVOBs"). Bidders are expected to consider SDVOBs in the fulfillment of the requirements of the Contract. Such participation may be as subcontractors or suppliers, as protégés, or in other partnering or supporting roles. OGS hereby establishes overall goals for SDVOBs' participation under this contract as follows: 6% for the C trade contractor, 3% for the E trade contractor, 3% for the H trade contractor, and 3% for the P trade contractor, based on the current availability of qualified SDVOBs. Trades with 0% goals are encouraged to make "good faith efforts" to promote and assist in the participation of SDVOBs on the Contract for the provision of services and materials.

The Office of General Services reserves the right to reject any or all bids.

The Bidding and Contract Documents for this Project are available for viewing, downloading, and Electronic Bidding from OGS Design & Construction's Electronic Bidding service, Bid Express.

Registration, along with viewing, downloading, and electronic bidding can be accessed at the following link: **http://www.bidexpress.com**

For questions about downloading of bid documents, please send an e-mail to **support@bidexpress.com**, or call the Bid Express toll-free number at (888) 352-2439.

For all other questions, please send an email to **DCPlans@ogs.ny.gov**, or call (518) 474-0203.

For additional information on this project, please use the link below and then click on the project number:

https://online.ogs.ny.gov/dnc/contractorConsultant/esb/ESBPlansAvailableIndex.asp.

OGS Design & Construction Group

END OF INFORMATION

DOCUMENT 002113

INSTRUCTIONS TO BIDDERS

1. EXAMINATION OF DOCUMENTS

1.1. Carefully examine and be familiar with the Bidding and Contract Documents.

1.2. Examine information concerning subsurface or other latent physical conditions. It is presented in good faith but is not intended as a substitute for personal investigation, interpretations, or judgment of the Contractor.

2. VISIT TO THE SITE

2.1. For projects that include Document 002218, visit the Site of the Work prior to submitting your bid. Refer to the Advertisement for Bids for any special instructions.

2.2. Become familiar with restrictions and regulations established by the facility. Existing restrictions and regulations will not be considered as grounds for any additional cost over the Contract sum.

2.3. Assume the risk of encountering any subsurface or other latent physical condition that can be reasonably anticipated on the basis of documentary information provided by the State and from inspection and examination of the Site.

2.4. Interpretations of contract documents by facility personnel are not binding.

3. DESIGNATED, PERMISSIBLE, IMPERMISSIBLE CONTACTS AND QUESTIONS

3.1. The designated contacts during the restricted period for this procurement will be:

- Megan Whaley, Contract Awards Unit, telephone – (518) 474-0203, fax – (518) 473-7862
- Catherine Skaczkowski, Contract Awards Unit, telephone – (518) 474-0203, fax – (518) 473-7862
- Jessica Hoffman, Assistant Director, Contract Management, telephone – (518) 474-0203
- Pierre Alric, Director, Contract Management, telephone – (518) 474-0201

3.2. State Finance Law §139-j recognizes a series of permissible contacts that can go to other than the designated contacts, as follows:

3.2.1. The submission of written proposals in response to a request for proposals, invitation for bids or any other method for soliciting a response from offerers intending to result in a procurement contract.

3.2.2. The submission of written questions to a designated contact set forth in a request for proposals, or invitation for bids, or any other method for soliciting a response from offerers intending to result in a procurement contract, when all written questions and responses are to be disseminated to all offerers who have expressed an interest in the request for proposals, or invitation for bids, or any other method for soliciting a response from offerers intending to result in a procurement contract.

3.2.3. Participation in a conference provided for in a request for proposals, invitation for bids, or any other method for soliciting a response from offerers intending to result in the procurement contract.

3.2.4. Complaints by an offerer regarding the failure of the person or persons designated by the procuring governmental entity pursuant to this section to respond in a timely manner to authorized offerer contacts made in writing to the office of general counsel of the procuring governmental entity, provided that any such written complaints shall become a part of the procurement record.

3.2.5. Offerers who have been tentatively awarded a contract and are engaged in communication with a governmental entity solely for the purpose of negotiating the terms of the procurement contract after being notified of tentative award.

3.2.6. Contacts between designated governmental staff of the procuring governmental entity and an offerer to request the review of a procurement contract award.

3.2.7. Contacts by offerers in protests, appeals or other review proceedings (including the apparent successful bidder or proposer and his or her representatives) before the governmental entity conducting the procurement seeking a final administrative determination, or in a subsequent judicial proceeding.

3.2.8. Complaints of alleged improper conduct in a governmental procurement to the attorney general, inspector general, district attorney, or court of competent jurisdiction.

3.2.9. Written protests, appeals, or complaints to the New York State Office of the State Comptroller (OSC) during the process of contract approval, where OSC's approval is required by law, and where such communications and any response thereto are made in writing and shall be entered in the procurement record pursuant to §163 of the State Finance Law.

3.2.10. Complaints of alleged improper conduct in a governmental procurement conducted by a municipal agency or local legislative body to OSC's office.

3.2.11. Permissible Contacts are only with the procuring agency unless specifically excepted.

3.3. Impermissible contacts include those that a reasonable person would infer are intended to influence a governmental procurement and occur during the restricted period of a governmental procurement between the offerer and any member, officer or employee of any governmental entity; provided, however, that nothing in this section shall be deemed to prohibit an offerer from communicating with a member of the state legislature or legislative staff about a governmental procurement. Contacting a person or entity other than the designated contact person during the restricted period, when such contact does not fall within one of the exemptions, is also an impermissible contact.

Direct all questions regarding the intent or meaning of the drawings or specifications to the Office of General Services (OGS) website at:

https://online.ogs.ny.gov/dnc/contractorConsultant/esb/esbplansavailableindex.asp

From this web page, first click on the project number link, then on the **Review/Submit Bid Questions** link, and then submit the question for the appropriate trade. All responses to appropriate pre-bid inquiries will be communicated via the OGS website. Those inquiries resulting in clarification and or changes to the bid documents will be communicated by Addenda to all persons who have obtained drawings and specifications.

3.4. Pre-bid inquiries answered by means other than Addenda will not be binding.

4. PREPARATION OF BIDS

4.1. **For electronic bids**: Prepare and submit bid using OGS Design & Construction's Electronic Bidding service, Bid Express®. Registration along with viewing, downloading, and electronic bidding can be accessed at the following website: **http://www.bidexpress.com.**

4.1.1. Prepare each bid on the official form furnished by the State within the Bid Express® website. Fill in all blank spaces. An incomplete entry may disqualify the bid in its entirety. No post bid meetings will be afforded to any bidder to explain or clarify an incomplete bid or entry omission(s).

4.1.2. Bidders must be registered with Bid Express® in advance. Bidders not previously registered with Bid Express® must complete a one-time registration for a user account. There is no cost to register, to view/download bid documents, or to submit a bid. Vendors can select 'Pay per solicitation (non-member)' when registering.

4.1.3. Bid Security is required in accordance with the BID SECURITY INFORMATION section within this document. Bidders must be registered with a Bid Express® approved bonding service in advance. Bidders not already registered must register with a Bid Express® approved bonding service, and shall refer to the instructions contained in the BID SECURITY INFORMATION section within this document.

4.1.4. Bidders must establish an Infotech® Digital ID in advance. The Infotech® Digital ID application process may take up to seven business days to complete. Refer to http://www.bidexpress.com for guidance on the application for and installation of Digital IDs. The Digital ID is an electronic tool that allows users to digitally sign bids, contracts, and forms. Digital IDs are used as part of a secure method of maintaining confidentiality and identity verification within the Bid Express® service.

4.2. **For paper bids**: Prepare each bid on the official form furnished by the State.

4.2.1. Make no erasures, cross-outs, whiteouts, write-overs, obliterations, or changes of any kind in the Bid Form phraseology, in the entry of unit prices, or anywhere on the Bid Form.

4.2.2. Fill in all blank spaces legibly. An illegible entry may disqualify the bid in its entirety. If a mistake is made, use a new Bid Form. No post bid meetings will be afforded to any bidder to explain or clarify illegible or changed entries.

4.2.3. Sign the Bid Form in the space provided. An officer or a principal of a corporation or a partnership signing for the bidder shall print or type the legal name of the person, partnership, or corporation on the line provided and place his/her signature after "SIGN BID HERE". The same procedure shall apply to the bid of joint venture by two or more firms, except that the signature and title of an officer or a principal of each member firm of the joint venture shall be required. All signatures must be original. Mechanically reproduced signatures, stamps, or copies are not acceptable. Submitted Bid Forms that do not conform to these requirements will be disqualified.

4.3. For paper or electronic bids, if the Project Manual contains Section 012300 - Alternates, indicate the amounts to be added to or deducted from the base bid in the spaces provided on the Bid Form. If the Work is to be performed at no change in cost, indicate "0". Any bid which fails to indicate an amount for each alternate will be held to be informal and may be rejected.

4.4. For paper or electronic bids, note in the space designated on the Bid Form, each Addenda by numbers, which have been issued.

4.4.1. For paper bids: If no Addenda have been issued, insert the word "NONE" in the space designated on the Bid Form.

4.5. For paper or electronic bids, all contractors submitting bids on public work projects are required to register with the New York State Department of Labor (NYSDOL) under Labor Law Section 220-i. The registration number must be entered in the space provided on the Bid Form. A complete and accurate registration number must be entered in the space provided on the Bid Form. Failure to possess an active and verifiable registration at the time of bid will result in disqualification of the bid.

4.6. All bidders must complete a form DCA-3 – ***Offerer Disclosure of Prior Non-Responsibility Determinations*** and submit it with their Bid.

4.6.1. For electronic bids: Complete and submit form DCA-3 within the Bid Express® website. Fill in all blank spaces.

4.6.2. For paper bids: Complete paper form DCA-3 and include it with the Bid Form. Fill in all blank spaces.

4.7. All bids, regardless of dollar value, must include the cost of Labor and Material and Performance Bonds.

5. BID SECURITY INFORMATION

5.1. Bid security is required as a guarantee that the bidder will enter into the Contract and furnish a satisfactory Performance Bond and Labor and Material Bond within the time specified on the Bid Form. Submit bid security in the amount indicated in the Advertisement for Bids in one of the following forms:

5.1.1. Certified check or bank check drawn upon a legally incorporated bank or trust company (payable to the Office of General Services).

5.1.2. Bid Bond on OGS Form 004313 to be issued by a Surety licensed in the State of New York.

5.1.2.1. **For electronic bids**: Electronic bid bond furnished by a Bid Express® approved bonding service is required for an Electronic Bid. Vendors must be registered with a Bid Express® approved bonding service. Refer to http://www.bidexpress.com for guidance and registration information. Vendors not already registered must complete a one-time registration with a Bid Express® approved bonding service. At the time of this publication, the Bid Express® approved bonding services are Tinubu at

https://www.tinubu.com, or Surety2000 at https://surety2000.com. Allow sufficient time for account registration and bond processing prior to the bid due date noted in the Advertisement for Bids.

5.1.2.2. **For paper bids:** Sign the bid bond in the space provided. An officer or a principal of a corporation or a partnership signing for the bidder shall print or type the legal name of the person, partnership, or corporation on the line provided and place his/her signature above "Principal". The same procedure shall apply to the bid security of a joint venture by two or more firms, except that the signature and title of an officer or a principal of each member firm of the joint venture shall be required. The same procedure shall apply to the signature for the Attorney-in-Fact. All signatures must be original. Electronic, mechanically-reproduced or stamped signatures, or copies, are not acceptable for either signature. Submitted Bid Security that does not conform to these requirements will be disqualified

5.2. Upon submission of a certified check or bank check, the bid security of the successful bidder will be returned (check issued by OSC) pending acceptance of the required bonds and the execution of Contract. The second low bidder's bid security will be returned after the successful bidder executes the Contract or with the submission of an approved Substitute Bid Bond on the Design and Construction form. The bid security of all other bidders with a bid security in the form of checks will be returned as soon as possible after the apparent low bidder has been determined.

5.3. Bid Bonds submitted as bid security will not be automatically returned to the bidder. Firms requesting to have bonds returned may do so in writing provided they are not the first or second low bidder prior to award. Only those requests made in writing, directed to the Contract Awards Unit, shall be considered for return.

6. SUBMISSION OF BID

6.1. Do not submit both electronic and paper bids. If both an electronic bid from Bid Express® and a paper bid are received from the same contractor, the electronic bid from Bid Express® will prevail, and the paper bid(s) will be disqualified.

6.2. Submit Bid Form, Bid Security and Form DCA-3 – ***Offerer Disclosure of Prior Non-Responsibility Determinations.***

6.2.1. **For electronic bids**: Complete and submit within Bid Express®.

6.2.1.1. Within Bid Express®, select the procurement from the 'Solicitations' tab and click 'Select For Bidding'. Fill in all blank spaces.

6.2.1.2. In accordance with the BID SECURITY INFORMATION section contained within this document, coordinate with a Surety Agent to obtain a Bond ID from one of the Bid Express® approved bonding services. Refer to the instructions in the BID SECURITY INFORMATION section of this document. Complete the Bid Bond information section within Bid Express® and click 'Verify Bid Bond'. Failure to submit a valid Bond ID from an approved electronic bonding service for a bond of the specified value may result in automatic bid disqualification.

6.2.1.3. Click 'Check Bid' and resolve any errors. Click 'Submit Bid'. Sign the electronic bid form using a Bid Express® approved digital ID by clicking 'Submit Bid'.

6.2.2. **For paper bids:** Provide bid in a sealed envelope addressed to:

NYS Office of General Services – Design & Construction Group
Division of Contract Management, Contract Awards Unit
35th Floor, Corning Tower
Albany, NY 12242

Exterior of sealed envelope shall include the words "SEALED BID ENCLOSED", Project Number and Trade Designation of Bid, Bid Due Date, Company Name, Address and Federal ID Number.

6.2.3. Telephone, email, fax, or electronic bids other than electronic bids submitted within Bid Express® will not be accepted.

6.3. All bids must be received before the time specified, and at the place designated for the receipt of bids.

6.4. **Late Bids**:

6.4.1. Electronic bids cannot be accepted after the due date and time.

6.4.2. Paper bids received after the due date and time will be returned unopened with notification of the reason for its refusal.

6.4.3. A late paper bid will be considered if: (1) its arrival at the place designated after the time specified can be shown by documentary or other proofs to be due to mishandling by OGS and (2) that absent such mishandling, the bid would have arrived timely. Delays in the mail or any other means of transmittal, including couriers or agents of the State, other than employees of OGS will not suffice to excuse late arrival of the bid.

7. MODIFICATION OF BID

7.1. Bid Modifications By Amendment:

7.1.1. **For Modification to Electronic Bids:** Electronic bids may be modified on Bid Express® up to the deadline for receipt of bids. To modify your bid, access your bid in Bid Express®, modify applicable component(s), select Submit Bid to update the bid. Refer to the Submission Status to confirm the Last Submitted date and time. Only the submitted bid will be considered.

7.1.2. **For Modification to Paper Bids:** Modifications by amendment will only be considered on condition that the amendment arrives before the time specified and at the place designated for receipt of bids, and

7.1.2.1. The amendment is in writing and executed by a principal of the bidder firm, and

7.1.2.2. The bid, as amended, conforms in all respects with the Contract Documents. Bidders may mail or fax their bid modifications. Fax bid modifications to (518) 473-7862. Bidders may use a bid modification to acknowledge addenda and/or change the bid amount. Bid modifications received by fax must be on company letterhead and signed by a principal of the bidder firm. DO NOT use the OGS Bid Form to submit bid modifications by fax. Indicate any amounts to be added to or deducted from any part of the bid amount with the words "ADD" or "DEDUCT" next to the amount. The only amounts listed on a faxed bid modification should be the amounts to be added or deducted. **DO NOT expose the new bid amount on the faxed bid modification.** If the bid amount is shown on the faxed bid modification, or otherwise exposed at any time before the bid opening, the bid will be disqualified.

8. WITHDRAWAL OF BID

8.1. A bid may be withdrawn at any time prior to the time specified for receipt of bids.

8.1.1. For electronic bids, bidders can withdraw their bids on Bid Express® up to the time specified for receipt of bids.

8.1.2. For paper bids, should a bidder decide to withdraw its bid before the bid opening, the request must be prepared on company letterhead, signed by a principal of the bidder firm, and faxed to (518) 473-7862, or hand-delivered or mailed to the Contract Awards Unit at the place designated for receipt of bids. OGS will e-mail an acknowledgment of the withdrawal request that includes an indication that the unopened bid will be returned. Should the withdrawal request be in error, the bidder must call the Contract Awards Unit at (518) 474-0203 immediately. The unopened bid will be returned by mail to the bidder.

8.2. Not more than 7 calendar days after the bid opening or a scheduled pre-award meeting, whichever comes later, a low bidder may request the withdrawal of its bid based on a mistake. The request must be submitted via certified or registered mail to the address in Paragraph 6.2.2 of these Instructions to Bidders. The Contracting Officer may conduct or have conducted on his/her behalf a fact-finding proceeding to develop information concerning the request for withdrawal. A request for withdrawal of a bid made after the specified number of days allowed shall result in forfeiture of the bid security.

8.3. Following a timely request for withdrawal of a bid, the bid security will be returned if the bidder establishes by credible evidence, including original documents when requested, the following:

8.3.1. An error, clerical as opposed to judgmental in nature and verifiable by written evidence, occurred in the computation of the bid,

8.3.2. The error constitutes either an unintentional and substantial computational error or an unintentional omission of a substantial quantity of labor and/or material from the final bid computation,

8.3.3. The absence of gross negligence in the preparation of the bid. For the purposes of this subparagraph, gross negligence may include:

i) the apparent failure of a bidder to account for two or more categories (divisions) of work,

ii) the use of multiple erroneous quotations from subcontractors or suppliers,

iii) submission to the Contracting Officer of a bid withdrawal request within the preceding six (6) months.

8.4. If the bidder fails to meet its burden of proof, the request to withdraw without penalty shall be denied and its bid security will be forfeited and become the property of the State. The decision of the Contracting Officer shall be final and conclusive.

8.5. Once a request to withdraw is made, the bidder is ineligible for award. The Contracting Officer shall continue to progress the award process considering only the remaining bids.

9. DISQUALIFICATION

9.1. Any bid which fails to conform to the requirements of the Bidding and Contract Documents may be rejected.

9.2. The Commissioner may waive any informality or afford the bidder an opportunity to remedy any deficiency resulting from a minor informality or irregularity.

9.3. The State reserves the right to disqualify bidders, before or after bid opening, upon evidence of collusion with third parties or other illegal practices upon the part of the bidder.

9.4. Bidders may review the list of common Bid Informalities and Bid Disqualifications at:

https://online.ogs.ny.gov/dnc/contractorConsultant/esb/informalitylist.asp

10. GOVERNING LAWS AND REGULATIONS ADMINISTERED BY OTHER DEPARTMENTS

10.1. **Taxes**: All taxes pertaining to the Work must be paid. Address inquiries regarding taxes to the Tax Collecting Agency. For information regarding sales and use taxes contact the Sales Tax Bureau, Department of Taxation and Finance.

10.2. While all applicable laws, rules and regulations of the State of New York are incorporated by reference in this Contract, take special note of the provisions of the Labor Law and Industrial Code Rule 23 relative to the safety of workers and of persons lawfully occupying or using the premises. Address inquiries regarding labor law provisions to the New York State Department of Labor.

10.3. **Anti-Discrimination Clause**: Discrimination against any employee or applicant for employment because of race, creed, color, national origin, sex, age, disability, or marital status is prohibited.

11. OPENING OF BIDS

Bids will be opened as announced in the Advertisement for Bids.

12. DETERMINATION OF CONTRACTOR'S RESPONSIBILITY

12.1. The State Public Buildings Law requires that contracts for public work in the State of New York be awarded to the lowest responsible and reliable bidders as will best promote the public interest.

12.2. Each apparent low bidder, and each proposed subcontractor (for subcontract work of $100,000 or more) will be required to submit form CCA-2 - ***New York State Vendor Responsibility Questionnaire For Profit Construction*** prior to contract award or subcontractor approval. OGS reserves the right to request CCA-2 forms from proposed subcontractors for work of less than $100,000 if it is determined to be in the best interest of the State. Submission of these forms will assist the State in determining the responsibility and reliability of the vendor.

OGS recommends that vendors file the required CCA-2 form online via the New York State VendRep System. Use of this system requires that the vendor have a New York State Vendor Identification Number (Vendor ID). Please note that the Vendor ID is not the Taxpayer ID number.

If bidders do not already have a Vendor ID, they are encouraged to obtain one ***in advance of*** the bid opening.

To obtain a Vendor ID, contact the OSC Help Desk at 866-370-4672 or 518-408-4672, or by e-mail at ITServiceDesk@osc.state.ny.us.

To enroll in and use the VendRep System, see the **VendRep System** page at:

http://www.osc.state.ny.us./vendrep/info_vrsystem.htm

If you already have a User ID and password, go directly to the VendRep System online at:

https://www.osc.state.ny.us/state-vendors/vendrep/file-your-vendor-responsibility-questionnaire

For direct VendRep System user assistance, contact the OSC Help Desk; the help desk phone numbers and e-mail address are shown above.

Vendors opting to file a paper questionnaire can obtain the appropriate questionnaire from the VendRep website at **http://www.osc.state.ny.us/vendrep/forms_vendor.htm** or may telephone the OSC Help Desk.

12.3. After the bids are opened, the apparent low bidder shall complete and file the CCA-2 within 5 days. Vendors using the online system may certify (or recertify) and file the CCA-2 electronically via the VendRep System: **https://www.osc.state.ny.us/state-vendors/vendrep/file-your-vendor-responsibility-questionnaire**

12.4. It is recommended that all bidders become familiar in advance with all of the requirements of the CCA-2. As mentioned in 12.2, bidders who do not have a Vendor ID are encouraged to obtain one in advance of the bid opening.

12.5. All bidders must submit a completed form DCA-3 - ***Offerer Disclosure of Prior Non-Responsibility Determinations*** along with their Bid Form.

12.6. The determination of responsibility will include a review to ensure the Contractor has not knowingly and willfully violated the provisions of the Procurement Lobby Law or New York State Finance Law §139-j and §139-k.

12.7. New York State Finance Law §139-k (2) obligates a Governmental Entity to obtain specific information regarding prior non-responsibility determinations. This information must be collected in addition to the information that is separately obtained pursuant to State Finance Law §163(9). In accordance with State Finance Law §139-k, a Contractor must be asked to disclose whether there has been a finding of non-responsibility made within the previous four (4) years by any Governmental Entity due to: (a) a violation of State Finance Law §139-j or (b) the intentional provision of false or incomplete information to a Governmental Entity.

12.8. As part of its responsibility determination, State Finance Law §139-k(3) mandates consideration of whether a Contractor fails to timely disclose accurate or complete information regarding the above non-responsibility determination. In accordance with law, no procurement contract shall be awarded to any Contractor that fails to timely disclose accurate or complete information under this section, unless a finding is made that the award of the Procurement Contract to the Offerer is necessary to protect public property or public health safety, and that the Offerer is the only source capable of supplying the required Article of Procurement within the necessary time frame.

13. AWARD OF CONTRACT

13.1. The Contract may be awarded to the lowest responsible and reliable bidder as will best promote the public interest.

13.2. If alternates are included in the bidding documents, the State reserves the right to accept or reject any or all alternates. The State shall determine the lowest bid by adding to or deducting, from the Base Bid Amount of the bidders, the additive or deductive alternates, if any, that the State elects to accept after the opening of the bids. Alternates will be accepted in the order they are set forth in the contract documents.

13.3. The State reserves the right to reject any or all bids, and advertise for new bids, if in its opinion the best interest of the State will thereby be promoted. In the event that all bids are rejected, each bidder will be so notified.

13.4. A bidder may withdraw its bid if no award is made within forty-five (45) days after the receipt of bids. A written notice must be submitted via certified or registered mail to the address in Paragraph 6.2.2 of these Instructions to Bidders prior to approval of the contract by OSC. The notice must clearly state that the withdrawal is based on the fact that the contract was not awarded within 45 days after the receipt of bids.

13.5. Pursuant to Public Buildings Law § 8(6), effective January 11, 2020, for any projects where the project design commenced on or after January 1, 2020 and for any contracts over $5,000 for the work of construction, reconstruction, alteration, repair, or improvement of any State building, a responsible and reliable NYS-certified Minority or Women-Owned Business Enterprise ("MWBE") that submits a bid within ten percent of the lowest bid will be deemed the apparent low bidder provided that the MWBE bid is $1,737,918 or less, adjusted annually for inflation as of March 1, 2026. If more than one responsible or reliable NYS-certified MWBE firm meets these requirements, the MWBE firm with the lowest bid will be deemed the apparent low bidder. Refer to the Advertisement for Bids for applicability of projects subject to this criteria.

14. MINORITY- AND WOMEN-OWNED BUSINESS ENTERPRISES

14.1. Pursuant to New York State Executive Law Article 15-A and the rules and regulations promulgated thereunder, OGS is required to promote opportunities for the maximum feasible participation of NYS-certified Minority- and Women-owned Business Enterprises and the employment of minority group members and women in the performance of OGS contracts.

14.2. Information on the availability of subcontractors and suppliers for this project may be accessed by first using the following website link:

https://online.ogs.ny.gov/dnc/contractorConsultant/esb/esbplansavailableindex.asp

From this web page, first click on the project number link, then on Interested Subcontractors and Suppliers, and follow the prompts. A list of all interested vendors will be provided with their contact information, MWBE and SDVOB status', and construction specialties.

14.3. Other information on MWBEs, including a directory of MWBE's, is available from:

NYS Empire State Development
Minority and Women's Business Development Division
30 South Pearl Street
Albany, NY 12245
Telephone: (518) 292-5252
Website: https://esd.ny.gov/doing-business-ny/mwbe

15. SURETY BOND

If required, the Contractor shall furnish Performance and Payment Bonds in an amount equal to one hundred percent (100%) of the total Contract price as security for the faithful performance of this Contract, and for the payment of all persons performing labor or furnishing materials in connection with this contract. These bonds are to be executed on the State Comptroller's form and the surety company must be licensed in the State of New York, have a Best Rating of A- or better and appear on the most recent published Department of the Treasury's Listing of Approved Sureties (Department Circular *570*) at the time of filing the bonds.

16. VENDOR PROTEST POLICY

It is the policy of OGS to provide all vendors, prospective bidders, bidders, suppliers and contractors with an opportunity to resolve complaints or inquiries related to bid solicitations, contract awards, or other associated contract award actions. OGS encourages vendors to seek resolution of complaints related to bid solicitations, contract awards, or other associated actions through consultation with the agency designated contact(s). All such complaints will be given impartial and timely consideration. Vendors may also file formal written protests. A copy of the Design and Construction Vendor Protest Policy and Procedures may be obtained by contacting the designated contact or by visiting the OGS website at:

https://ogs.ny.gov/design-construction/vendor-protest-policy-procedures

17. POLICY ON TIED BIDS

A tie-bid is defined as an instance where bids are received from two or more bidders who are the apparent low responsive and reliable bidders with identical offers, or who are MWBEs with identical offers with bids of $1,737,918 or less and whose bids are within ten percent of the lowest bid. A tie-bid does not exist when an apparent low bidder has an identical offer to an MWBE, as the MWBE is deemed the apparent low bidder pursuant to Public Buildings Law § 8(6). It is the policy of OGS to settle the outcome of tie-bids by either drawing a name from a hat or flipping a coin within 24 hours of the bid opening. All affected firms will be notified of the tie and the time and place of the resolution of the tie, and shall be invited to witness the outcome. Attendance is not mandatory. The drawing/flip will be held at OGS, Contract Awards Unit, 35th Floor, Corning Tower, Albany, New York. Two impartial witnesses will be provided and shall be present. All attendees will acknowledge the results of the tie-breaker on the bid tabulation sheet. All firms affected by the tied bids will be notified of the results. The results pursuant to this provision shall be considered final.

18. WORKERS' COMPENSATION INSURANCE AND DISABILITY BENEFITS REQUIREMENTS

Workers' Compensation Law (WCL) §57 & §220 requires the heads of all municipal and state entities to ensure that businesses applying for permits, licenses or contracts provide proof that they have appropriate workers' compensation and disability benefits insurance coverage. These requirements apply to both original contracts and renewals, whether the governmental agency is having the work done or is simply issuing the permit, license or contract. Failure to provide proof of such coverage or a legal exemption will result in a rejection of the vendor's bid or renewal.

18.1. **Proof of Compliance with Workers' Compensation Coverage Requirements**: In order to provide proof of compliance with the requirements of the Workers' Compensation Law pertaining to workers' compensation coverage, a contractor shall: (1) obtain such coverage from an insurance carrier; or (2) be a Workers' Compensation Board-approved self-insured employer or participate in an authorized self-insurance plan; or (3) be legally exempt from obtaining Workers' Compensation insurance coverage.

An ACORD 25 form is **NOT** acceptable as proof of workers' compensation coverage.

A Contractor seeking to enter into a contract with the State of New York **MUST** provide **ONE** of the following forms to OGS upon request, prior to award:

18.1.1. CE-200, ***Certificate of Attestation of Exemption from NYS Workers' Compensation and/or Disability Benefits Coverage***, which is available on the Workers' Compensation Board's website, www.wcb.ny.gov, under the heading "Forms"; **OR**

18.1.2. C-105.2 – ***Certificate of Workers' Compensation Insurance*** (the contractor's insurance carrier will send this form to OGS upon request); contractors insured through the New York State Insurance Fund should use their version of the form, the U-26.3; **OR**

18.1.3. SI-12 – ***Certificate of Workers Compensation Self-Insurance*** (the contractor should call the Workers' Compensation Board's Self-Insurance Office at 518 402-0247), **OR** GSI-105.2 – ***Certificate of Participation in Workers' Compensation Group Self-Insurance*** (the contractor's Group Self-Insurance Administrator will send this form to OGS upon request).

18.2. Proof of Compliance with Disability Benefits Coverage Requirements: In order to provide proof of compliance with the requirements of the Workers' Compensation Law pertaining to disability benefits, a contractor shall: (1) obtain such coverage from an insurance carrier; or (2) be a Board-approved self-insured employer; or (3) be legally exempt from obtaining disability benefits coverage.

An ACORD 25 form is NOT acceptable as proof of disability benefits coverage.

A Contractor seeking to enter into a contract with the State of New York **MUST** provide **ONE** of the following forms to OGS upon request, prior to award:

18.2.1. CE-200 – ***Certificate of Attestation of Exemption from NYS Workers' Compensation and/or Disability Benefits Coverage,*** which is available on the Workers' Compensation Board's website**,** **www.wcb.ny.gov**, under the heading "Forms"; **OR**

18.2.2. DB-120.1 – ***Certificate of Disability Benefits Insurance*** (the contractor's insurance agent, broker or carrier will send this form to OGS upon request); **OR**

18.2.3. DB-155 – ***Certificate of Disability Benefits Self Insurance*** (the contractor should call the Workers' Compensation Board's Self-Insurance Office at 518 402-0247).

18.3. All of the above-referenced forms, except the CE-200, SI-12 and DB-155, must show the following as the Entity Requesting Proof of Coverage (entity being listed as the Certificate Holder):

NYS Office of General Services – Design & Construction Group
Division of Contract Management
35th Floor, Corning Tower, GNARESP
Albany, NY 12242

19. ELECTRONIC CONTRACTOR PAYMENTS (ECP)

The ECP Program is initiated with an Electronic Contractor Payments (ECP) Certification Form that is forwarded to the contractor with the project agreement and bond forms. This form must be completed, executed and returned with the executed Contract agreement in order for the contractor to participate in the ECP program. The executed ECP Certification Form will remain on file. Note that the certification will apply to this contract and to future ECP-eligible contracts.

19.1. Upon final approval of the contract, an e-mail will be sent to the contractor's designated e-mail address with a hyperlink that will enable the firm to register, using a temporary password, on the OGS Design & Construction Vendor Interface. The temporary password will be sent to the contractor in letter form that is mailed on the same day.

19.2. The OGS Vendor Interface website will provide the ability to view contract information, submit the detailed estimate and payments requests electronically, and communicate with OGS Design & Construction.

20. IRAN DIVESTMENT ACT

20.1 By submitting a bid in response to this solicitation or by assuming the responsibility of a Contract awarded hereunder, bidder/Contractor (or any assignee) certifies that it is not on the "Entities Determined To Be Non-Responsive bidders/Offerers Pursuant to The New York State Iran Divestment Act of 2012" list ("Prohibited Entities List") posted on the OGS website at

http://www.ogs.ny.gov/about/regs/docs/ListofEntities.pdf

and further certifies that it will not utilize on such Contract any subcontractor that is identified on the Prohibited Entities List. Additionally, bidder/Contractor is advised that should it seek to renew or extend a Contract awarded in response to the solicitation, it must provide the same certification at the time the Contract is renewed or extended.

20.2 During the term of the Contract, should OGS receive information that a person (as defined in State Finance Law §165-a) is in violation of the above-referenced certifications, OGS will review such information and offer the person an opportunity to respond. If the person fails to demonstrate that it has ceased its engagement in the investment activity which is in violation of the Act within 90 days after the determination of such violation, then OGS shall take such action as may be appropriate and provided for by law, rule, or contract, including, but not limited to, seeking compliance, recovering damages, or declaring the Contractor in default.

20.3 OGS reserves the right to reject any bid, request for assignment, renewal, or extension for an entity that appears on the Prohibited Entities List prior to the award, assignment, renewal or extension of a contract, and to pursue a

responsibility review with respect to any entity that is awarded a contract and appears on the Prohibited Entities list after contract award.

21. NOT USED

END OF DOCUMENT

DOCUMENT 002213

SUPPLEMENTARY INSTRUCTIONS TO BIDDERS - MWBE-EEO

This Supplement modifies the Instructions to Bidders. Where any part of the Instructions to Bidders is modified by this supplement, the unaltered provisions of that part shall remain in effect.

Add the following:

22. GOALS

22.1 To ensure meaningful participation in the Project of certified Minority- and Women-Owned Business Enterprises ("MWBEs") under the Contract, the Commissioner of General Services has established goals set forth in the Supplementary Conditions.

22.2 All bidders should note that important definitions and conditions relating to the foregoing MWBE goals are contained in the Supplementary Conditions.

22.3 In order to assist the State in determining compliance with the goals set forth in the Supplementary Conditions the apparent low bidder will be required to submit an MWBE Utilization Plan via the New York State Contracting System (NYSCS) prior to Contract award or subcontractor approval.

22.4 If unable to submit an MWBE Utilization Plan through the NYSCS, the apparent low bidder must use Form BDC 328 to submit the plan. The BDC 328 form is available for download at https://ogs.ny.gov/mwbe/forms and may be mechanically reproduced. Additional copies may be obtained upon request from the address listed in Paragraph 23.2 below.

22.5 The apparent low bidder must submit the completed MWBE Utilization Plan within seven (7) calendar days after the bids are opened. OGS will review the submitted MWBE Utilization Plan and advise the bidder of OGS acceptance or issue a notice of deficiency within twenty (20) days of receipt.

23. CERTIFICATION

23.1 All Minority- and Women-Owned Business Enterprises ("MBEs" or "WBEs") proposed as contractors, subcontractors or suppliers must be certified by the NYS Empire State Development, Division of Minority and Women's Business Development to be eligible for MBE or WBE credit on this project.

23.2 UPON WRITTEN REQUEST, The New York State Office of General Services' Office of Business Diversity (OBD) will provide a computer printout of certified MBEs and WBEs in specific trades for a given geographical area of New York State.

This printout can be requested in writing as follows:

- By e-mail to: DCMWBEManager@ogs.ny.gov
- By fax to: (518) 486-2679

- By mail to:

  NYS Office of General Services
  Office of Business Diversity
  29th Floor, Corning Tower, GNARESP
  Albany, NY 12242

24. LIQUIDATED DAMAGES – MWBE PARTICIPATION

24.1 Refer to Article 27.8, Document 007307, Supplementary Conditions - MWBE-EEO, for "Liquidated Damages – MWBE Participation".

END OF DOCUMENT

DOCUMENT 002218

SUPPLEMENTARY INSTRUCTIONS TO BIDDERS - PRE-BID SITE VISIT

This Supplement modifies the Instructions to Bidders. Where any part of the Instructions to Bidders is modified by this supplement, the unaltered provisions of that part shall remain in effect.

2. VISIT TO THE SITE

Change 2.1 to Read:

2.1 Prospective bidders will be allowed to visit the job site to take field measurements and examine existing conditions of the project area only during the pre-bid site visit. Prospective bidders are urged to visit the site at this time. Prospective bidders or their representatives attending the pre-bid site visit will not be admitted on facility grounds without proper photo identification. Parking restrictions and security provisions will apply and vehicles will be subject to search. The date, time, location of the pre-bid site visit, and the phone number are included in the Advertisement for Bids.

Bidders are strongly encouraged to visit the project site to assess the following project conditions or quality standards: Existing Site conditions, locations of existing utilities on site.

Phone a minimum of 48 hours in advance of the pre-bid site visit with the names of those who will attend.

All participants shall comply with facility rules and regulations.

Participants will not be allowed to deviate from the group walk-thru and must stay with the group for the duration of the visit. All participants will adhere to the direction given by the Director's Representative at all times during the visit.

Individuals shall not attend the site visit if they are feeling ill.

END OF DOCUMENT

DOCUMENT 002219

SUPPLEMENTARY INSTRUCTIONS TO BIDDERS - QUALIFICATIONS OF BIDDERS AND MANDATORY PRE-AWARD SUBMITTAL REQUIREMENTS

This Supplement modifies the Instructions to Bidders. Where any part of the Instructions to Bidders is modified by this supplement, the unaltered provisions of that part shall remain in effect.

Add the following Articles:

25. QUALIFICATIONS OF BIDDERS

25.1 The Contracting Officer or their representative will schedule a pre-award meeting to consider the bid responsiveness of the bid submitted by the apparent low bidder within fourteen (14) calendar days of the bid opening. Bidders will be notified of the time and place of the meeting. On a case by case basis, the State will examine and evaluate the bid as responsive by considering the contractors understanding of: the overall project scope, estimated cost, utilization of proposed sub-contractors, expertise, workmanship and past performance in completing similar contracts.

25.2 The Contracting Officer or their respective representative will conduct an investigation to determine the responsibility of any Bidder, including the ability of any Bidder to perform the Work. Bidders shall furnish to the Officer all information and data requested, including complete financial data, within the time and in the form and manner requested. The Contracting Officer reserves the right to reject any bid if the evidence required by the Officer is not submitted as requested, or if the evidence submitted by or the investigation of any Bidder fails to satisfy the Contracting Officer that the Bidder is responsible, or is able and qualified to carry out the obligations of the Contract, or to complete the Work as indicated in the Contract Documents, or able to reasonably perform the Work for the Bid Amount.

25.3 The criteria contained in Executive Order No. 170.1 Uniform Guidelines for Determining the Responsibility of Bidders will be applied in the evaluation of Bidders. Special criteria that will be considered in establishing the responsibility of the Bidders shall include, but not be limited to established experience in performing the Work required by the Contract Documents. Experience will be viewed from comparable projects as well as experience and knowledge of construction by the firm's personnel.

26. MANDATORY PRE-AWARD SUBMITTAL REQUIREMENTS

26.1 The apparent low bidder must submit the required pre-award submittal package outlined below to the Regional Supervisor within seven (7) calendar days after the bids are opened.

Regional Supervisor Name: Timothy Ebersole, P.E
Address: OGS Field Office, 2990 Wende Road, Bldg. 29, Alden, NY 14004
Phone: 716-937-4200
Email: Region7preawardsubmittals@ogs.ny.gov

Submissions must be emailed and must include the Project Number of this contract in the Subject Line of the Pre-Award submission email (i.e. OGS PN 12345-C: Pre-Award Submission).

Pre-award Submittal Package:

1. References and Experience:
   a. List of all past contracts with OGS. Include OGS Project Number and date.
   b. Provide three (3) references (Name, Title, and Phone Number) associated with three (3) different projects (OGS, public, or private sector) of similar scope and size to the one identified in this contract. Additionally, include the names of two major suppliers used for each of these three (3) projects.

      Provide a copy of recent past experience as required under the filing of the NYS Vendor Responsibility Questionnaire (CCA-2 document) with the Office of the State Comptroller. Provide only Attachment A: Completed Construction Contracts and Attachment B: Uncompleted Construction Contracts. For additional information, see:

      http://www.osc.state.ny.us/vendrep/form_cca2.htm

2. Workforce and Work Plan – Provide a detailed written Work Plan which shall demonstrate the contractor's understanding of overall project scope and shall include, but not be limited, to the following:
   a. Sequential listing of specific project activities required to successfully complete the Work of the contract.
      1. Include Critical Milestones.
      2. Include phasing of the Work, if required.
      3. Include listing of long lead items.
      4. Impact of weather and restricted work period(s).
      5. Include a list of site-/project-specific safety hazards, and how such hazards will be considered in performance of the Work.
   b. Résumés for Contractor's proposed supervisory staff, including qualifications for specialized expertise or any certification(s) required to perform the Work.
   c. Schedule Preparer qualifications when required by specification 013200.
   d. Submittal Coordinator qualifications when required by specification 013300.
   e. Names of proposed major sub-contractors (more than 15% of the bid amount or where critical systems of work are identified in the contract) and a listing of the related trade of work and value.
   f. Any special coordination requirements with other trades.
   g. Any special storage and staging requirements for construction materials.

3. Detailed Cost Estimate:
   a. A copy of a Detailed Cost Estimate outlined in CSI format.

4. Provide information for any other special requirements at the request of the Director's Representative.

26.2 When requested by the Contracting Officer or their representative, Bidders shall, within the time specified by the Officer, submit to the Officer the names of the Subcontractors the Bidder proposes to use on the project. The Contracting Officer reserves the right to disapprove the use of any proposed Subcontractor. In such an event the Bidder shall submit the name of another Subcontractor in like manner within the time specified by the Officer. The Bidder shall have and will make no claim for compensation if the Contracting Officer disapproves any proposed Subcontractor. The Contracting Officer reserves the right to reject any bid if the names of proposed Subcontractors, or additional subcontract information, are not submitted as required.

END OF DOCUMENT

DOCUMENT 003132

GEOTECHNICAL DATA

The subsurface logs included in this Document were made on the dates indicated on the individual logs.

The observed water levels and/or conditions noted on the subsurface logs are as recorded at the time of exploration. These water levels and/or conditions may vary considerably with time, according to the prevailing climate, rainfall, or other factors and are otherwise dependent on the duration of and method used in the explorations program.

Sound engineering judgment was exercised in preparing the subsurface logs. This information was prepared and is intended for State design and estimate purposes only. Its presentation is for the purpose of providing intended users with access to the same information available to the State. These subsurface logs are presented in good faith and are not intended as a substitute for personal investigation, independent interpretations, or judgment of the bidders.

DETACH AND USE THIS FORM

BID FORM FOR: 47510-C

CONSTRUCTION WORK

PROVIDE STORAGE BUILDING,
DOT REGION 5, ERIE COUNTY
75 EVANS ST
HAMBURG, NY

State of New York
Office of General Services
Design and Construction Group
Division of Contract Management
35th Floor, Corning Tower
The Gov. Nelson A. Rockefeller
Empire State Plaza
Albany, NY 12242

THIS IS A 4 PAGE BID FORM. ALL PAGES MUST BE COMPLETED.

THE STATE RESERVES THE RIGHT TO REJECT ANY OR ALL BIDS. EACH BID FORM SHALL BE ACCOMPANIED BY BID SECURITY (AS DESCRIBED IN THE INSTRUCTIONS TO BIDDERS) IN THE AMOUNT STATED IN THE ADVERTISEMENT FOR BIDS.

The Undersigned agrees to complete the Work within the time stated in Section 011000 of the Specifications.

The Undersigned acknowledges his/her understanding of the social policy concerning minority and women business participation in the State building construction program, and pledges to cooperate with the State in the implementation of this policy, and further pledges to exert good faith efforts to achieve participation of minority and female employees.

The Undersigned certifies, as to each of the occupations listed in the Prevailing Rate Schedule applicable to this Project, the ability and willingness to exert good faith efforts to achieve the goal for minority and women workforce participation as set forth in the Supplementary Conditions.

The Undersigned certifies the ability and willingness to exert good faith efforts to achieve the goals for Minority and Women-Owned Business Enterprise and Service-Disabled Veteran-Owned Businesses participation as set forth in the Supplementary Conditions.

The Undersigned declares that the Bidding and Contract Documents have been carefully examined and that all things necessary for the completion of the Work shall be provided.

The Undersigned agrees that the bid security shall be subject to forfeiture if this bid is accepted by the State and he/she does not submit executed copies of the Agreement WITHIN TEN (10) DAYS OF RECEIPT OF A WRITTEN REQUEST TO PROVIDE SUCH AGREEMENT. A Performance Bond and a Labor and Material Bond, each in an amount equal to the contract sum, shall be supplied with the executed Agreement and shall be the statutory form of public bonds required by Sections 136 and 137 of the State Finance Law.

By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that to the best of his/her knowledge and belief:

(1) The prices in this bid have been arrived at independently without collusion, consultation, communication, or agreement, for the purpose of restricting competition as to any matter relating to such prices with any other bidder or with any competitor;

(2) Unless otherwise required by law, the prices which have been quoted in this bid have not been knowingly disclosed by the bidder and will not knowingly be disclosed by the bidder prior to opening, directly or indirectly, to any other bidder or to any competitor;

(3) No attempt has been made or will be made by the bidder to induce any other person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition.

(4) This contract shall not cause or result in a violation of Section 74(3)(e) of the Public Officers Law which states: "No officer or employee of a state agency, member of the legislature or legislative employee should engage in any transaction as representative or agent of the State with any business entity in which he/she has a direct or indirect financial interest that might reasonably tend to conflict with the proper discharge of his/her official duties."

Federal Employer I.D. No. _____

(5) The Bidder understands and agrees to comply with the requirements of the Procurement Lobbying Law, State Finance Law § 139-j and § 139-k, and with OGS's procedures relating to permissible contacts during a procurement as required by State Finance Law § 139-j(3) and § 139-j(6)(b). Such requirements and procedures are posted at https://ogs.ny.gov/acpl.

(6) The bidder is not on the list created pursuant to paragraph (b) of subdivision 3 of section 165-a of the state finance law (NYS Iran Divestment Act of 2012). The list can be viewed at the following link: https://ogs.ny.gov/iran-divestment-act-2012

(7) Will New York State Businesses be used in the performance of this contract (refer to Document 007324)?

Yes ☐ No ☐

(8) The New York State Human Rights Law (Human Rights Law), Article 15 of the Executive Law, prohibits discrimination and harassment based on age, race, creed, color, national origin, sex, pregnancy or pregnancy-related conditions, sexual orientation, gender identity, disability, marital status, familial status, domestic violence victim status, prior arrest or conviction record, military status or predisposing genetic characteristics.

The Human Rights Law may also require reasonable accommodation for persons with disabilities and pregnancy-related conditions. A reasonable accommodation is an adjustment to a job or work environment that enables a person with a disability to perform the essential functions of a job in a reasonable manner. The Human Rights Law may also require reasonable accommodation in employment on the basis of Sabbath observance or religious practices.

Generally, the Human Rights Law applies to:

- all employers of four or more people, employment agencies, labor organizations and apprenticeship training programs in all instances of discrimination or harassment;
- employers with fewer than four employees in all cases involving sexual harassment; and,
- any employer of domestic workers in cases involving sexual harassment or harassment based on gender, race, religion or national origin.

In accordance with Executive Order No. 177, the Bidder hereby certifies that it does not have institutional policies or practices that fail to address the harassment and discrimination of individuals on the basis of their age, race, creed, color, national origin, sex, sexual orientation, gender identity, disability, marital status, military status, or other protected status under the Human Rights Law.

Executive Order No. 177 and this certification do not affect institutional policies or practices that are protected by existing law, including but not limited to the First Amendment of the United States Constitution, Article 1, Section 3 of the New York State Constitution, and Section 296(11) of the New York State Human Rights Law.

(9) In accordance with State Finance Law § 139-l, by submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that the bidder has and has implemented a written policy addressing sexual harassment prevention in the workplace and provides annual sexual harassment prevention training to all of its employees. Such policy shall, at a minimum, meet the requirements of section two hundred one-g of the labor law.

If the bidder cannot make the foregoing certification, such bidder shall so state and shall furnish with the bid a signed statement that sets forth in detail the reasons that the bidder cannot make the certification.

(10) In accordance with State Finance Law § 139-m, by submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that the bidder has and has implemented a written policy addressing gender-based violence and the workplace and has provided such policy to all of its employees, directors and board members. Such policy shall, at a minimum, meet the requirements of subdivision 11 of section five hundred seventy-five of the executive law.

If the bidder cannot make the foregoing certification, such bidder shall so state and shall furnish with the bid a signed statement that sets forth in detail the reasons that the bidder cannot make the certification.

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(11) In accordance with Section 165(5) of the State Finance Law, the bidder, by submission of this bid, certifies that it or any individual or legal entity in which the bidder holds a 10% or greater ownership interest, or any individual or legal entity that holds a 10% or greater ownership interest in the bidder, either (answer yes or no to one or both of the following, as applicable):

1. have business operations in Northern Ireland Yes ☐ No ☐ and if yes:

2. shall take lawful steps in good faith to conduct any business operations in Northern Ireland in accordance with the MacBride Fair Employment Principles relating to nondiscrimination in employment and freedom of workplace opportunity regarding such operations in Northern Ireland, and shall permit independent monitoring of compliance with such principles.

Yes ☐ No ☐

(12) Certification Under Executive Order No. 16 - Prohibiting State Agencies and Authorities from Contracting with Businesses Conducting Business in Russia

Executive Order No. 16 provides that "all Affected State Entities are directed to refrain from entering into any new contract or renewing any existing contract with an entity conducting business operations in Russia." The complete text of Executive Order No. 16 can be found here: https://www.governor.ny.gov/executive-order/no-16-prohibiting-state-agencies-and-authorities-contracting-businesses-conducting

The Executive Order remains in effect while sanctions imposed by the federal government are in effect. Accordingly, vendors who may be excluded from award because of current business operations in Russia are nevertheless encouraged to respond to solicitations to preserve their contracting opportunities in case the sanctions are lifted during a solicitation or even after award in the case of some solicitations.

As defined in Executive Order No. 16, an "entity conducting business operations in Russia" means an institution or company, wherever located, conducting any commercial activity in Russia or transacting business with the Russian Government or which the commercial entities headquartered in Russia or with their principal place of business in Russia in the form of contracting, sales, purchasing, investment, or any business partnership.

Is Vendor an entity conducting business operations in Russia, as defined above? Please answer by checking one of the following boxes:

☐ 1. No, Vendor does not conduct business operations in Russia within the meaning of Executive Order No. 16.

☐ 2.a. Yes, Vendor conducts business operations in Russia within the meaning of Executive Order No. 16 but has taken steps to wind down business operations in Russia or is in the process of winding down business operations in Russia. (Please provide a detailed description of the wind down process and a schedule for completion.)

☐ 2.b. Yes, Vendor conducts business operations in Russia within the meaning of Executive Order No. 16 but only to the extent necessary to provide vital health and safety services within Russia or to comply with federal law, regulations, executive orders, or directives. (Please provide a detailed description of the services being provided or the relevant laws, regulations, etc.)

☐ 3. Yes, Vendor conducts business operations in Russia within the meaning of Executive Order No. 16.

(13) In accordance with New York State Labor Law Section 220-i, the bidder certifies that it is registered with the New York State Department of Labor (NYSDOL) for public work projects. By submission of this bid and providing the registration number in the space indicated on this bid form, the bidder affirms that its registration is current and valid as of the date of bid submission.

Federal Employer I.D. No. _____

Addenda to the Contract Documents are available at:
https://online.ogs.ny.gov/dnc/contractorConsultant/esb/ESBPlansAvailableIndex.asp
The Undersigned acknowledges receipt and review of all Addenda to the Contract Documents on the above website, listed by number in the space below:

_____

The Undersigned proposes to perform the Work required for this project in accordance with the Contract Documents for the following amount:

BID AMOUNT

1.	All Work except Allowance(s)	$ _____.00
2.	Allowance(s) (As described in Section 012100)	$ 87,000.00
	Total Bid Amount (Sum of 1. & 2.)	$ _____.00

FEDERAL EMPLOYER I.D. NO. _____

NYSDOL CONTRACTOR REGISTRATION NO. (per NYS LABOR LAW 220-i) _____

Is your firm a NYS-Certified Minority and Women-Owned Business Enterprise (MWBE)? Yes ☐ No ☐

MWBE CERTIFICATION FILE NO. _____

SIGN BID HERE _____
Authorized Signature

PRINT NAME OF SIGNER _____

TITLE OF SIGNER _____

OFFICIAL COMPANY NAME _____

MAILING ADDRESS _____
Street

_____
City State Zip

TELEPHONE NO. _____ FAX NO. _____
Area Code Area Code

E-MAIL ADDRESS _____

*****

Federal Employer I.D. No. _____

FORM OF BID BOND - BID SECURITY
STATE OF NEW YORK
OFFICE OF GENERAL SERVICES - DESIGN & CONSTRUCTION

Sub. 3, Sec. 8 - Public Buildings Law

BE IT KNOWN, That _____

_____
(Name of Contractor)

_____
(Address)

(hereinafter called the "Principal") and _____ a corporation created and existing under the Laws of the State of _____ having its principal office in the City of _____ duly licensed as an insurance company in the State of New York, (hereinafter called the "Surety"), are held and firmly bound unto The People of the State of New York (hereinafter called the "State"), in the full and just sum of $81,100 good and lawful money of the United States of America, for the payment of which said sum of money, well and truly to be made, and done, the Principal binds themselves (himself, herself, itself), their (his, hers, its) heirs, executors and administrators, successors and assigns, and the Surety binds itself, its successors and assigns jointly and severally, firmly by these presents:

WHEREAS, the Principal has submitted to the Office of General Services of the State of New York a proposal for Construction Work, Provide Storage Building, DOT Region 5, Erie County, 75 Evans St, Hamburg, NY

AND

WHEREAS, the Principal intends to file this bond to guarantee that the Principal will execute a contract and furnish performance and labor and material bonds required by the terms of the Principal's proposal.

NOW, THEREFORE, the condition of the foregoing obligation is such, that if the Principal shall promptly submit an executed agreement and furnish performance and labor and material bonds required by the terms of the Principal's proposal, then this obligation shall be null and void, otherwise to remain in full force and virtue.

NOW, THEREFORE, the condition of the foregoing obligation is such that if the Principal fails to promptly submit an executed agreement and furnish performance and labor and material bonds required by the terms of the Principal's proposal, then the Surety itself, its successors and assigns, jointly and severally, shall pay the whole sum of money previously set forth in this document to the State.

IN TESTIMONY WHEREOF, the Principal has hereunto set their (his, hers, its) hand and seal and the Surety has caused this instrument to be signed by its Attorney-in-fact, _____ and its corporate seal to be hereunto affixed.

Signed, sealed and delivered in the presence of:

(Corporate seal
of Principal if a corporation)

_____ (L.S.)

_____ (L.S.)

Principal

_____ Company

(Corporate seal of Surety Co.) _____

_____

Attorney-in-fact

Witness _____

Name

_____

Name

(Acknowledgment by principal, unless it be a corporation)

STATE OF NEW YORK
SS.:
COUNTY OF _____

On this _____ day of _____20_____, before me personally came _____ to me known and known to me to be the person described in and who executed the foregoing instrument, and acknowledged that he/she executed the same.

_____
Notary Public County

(Acknowledgment by principal, if a corporation)

STATE OF NEW YORK
SS.:
COUNTY OF _____

On this _____ day of _____20_____, before me personally came _____ to me known, who being by me duly sworn, did depose and say that he/she resides in _____; that he/she is the _____ of the _____; the corporation described in and which executed the foregoing instrument; that he/she knew the seal of said corporation; that the seal affixed to said corporation; that the seal affixed to said instrument was such corporate seal; that it was so affixed by order of the Board of Directors of said corporation, and that he/she signed his/her name thereto by like order.

_____
Notary Public County

(Acknowledgment by Surety Company)

STATE OF NEW YORK
SS.:
COUNTY OF _____

On this _____ day of _____ 20_____, before me personally came _____ to me known, who being by me duly sworn, did depose and say that he/she resides in _____; that he/she is the _____ of the _____; the corporation described in and which executed the within instrument; that he/she knows the seal of said corporation; that the seal affixed to said instrument is such corporate seal; that is was so affixed by order of the Board of Directors of said corporation; and that he/she signed his/her name thereto by like order.

_____
Notary Public County

Empire State Development

NEW YORK STATE'S SURETY BOND

Assistance Program Helps Small Business Contractors Secure Surety Bonding

What is the NYS Surety Bond Assistance Program?

The NYS Surety Bond Assistance Program (NYSBAP) provides technical and financial assistance to help contractors secure surety bonding. Contractors may be eligible to receive a guarantee of up to 30% to secure a surety bond line, bid bond or a performance and payment bond on state projects.

How does the NYS Surety Bond Assistance Program work?

To apply for financial assistance, small business contractors should review eligibility requirements and fill out a pre-application assessment available at the Empire State Development (ESD) website.

If the assessment indicates you are eligible to submit an application, proceed with the Application and submit the required forms.

Guarantees of up to 30% on a bond line or individual contract bid bonds and payment/performance bonds are available from Empire State Development. Being eligible for this program does not automatically ensure bonding. Approval is based on both underwriting by a surety company and ESD's credit assessment. Participating surety companies will make a credit determination in accordance with their internal underwriting standards.

Small businesses can also enroll to receive training and technical support on how to become bond-ready by using the Contact Information below. The classroom training is held throughout New York State.

Who is eligible?

- Applicant must be a NYS small business or MWBE with at least two years of business operation.
- Maximum bond line or project size is $2 million
- Minimum average gross revenue of $400,000 in the last two fiscal or calendar years and maximum gross revenue not to exceed $5 million in the most recent calendar or fiscal year.
- Minimum credit score of 600.
- Previous experience completing similar work to the contract opportunity being pursued.

Find Out More

If interested in training or financial support, please visit ESD's website:
http://esd.ny.gov/BusinessPrograms/BondingAssistance.html

For additional inquiries, please contact:
Ms. Huey-Min Chuang
Senior Director of Business & Economic Development
212-803-3238
BAP@esd.ny.gov

Offerer Disclosure of Prior Non-Responsibility Determinations

See instructions on next page before completing this form.

Name of Individual or Entity Seeking to Enter into the Procurement Contract:

_____

Address: _____

_____

Name and Title of Person Submitting this Form: _____

_____

Contract Procurement Number: _____ Date: _____

1. Has any Governmental Entity made a finding of non-responsibility regarding the individual or entity seeking to enter into the Procurement Contract in the previous four years? (Please circle):

No Yes

If yes, please answer the next questions:

2. Was the basis for the finding of non-responsibility due to a violation of State Finance Law §139-j (Please circle):

No Yes

3. Was the basis for the finding of non-responsibility due to the intentional provision of false or incomplete information to a Governmental Entity? (Please circle):

No Yes

4. If you answered yes to any of the above questions, please provide details regarding the finding of non-responsibility below and attach additional pages as necessary.

Governmental Entity: _____

Date of Finding of Non-responsibility: _____

Basis of Finding of Non-Responsibility: _____

5. Has any Governmental Entity or other governmental agency terminated or withheld a Procurement Contract with the above-named individual or entity due to the intentional provision of false or incomplete information? (Please circle):

No Yes

6. If yes, please provide details below and attach additional pages as necessary.

Governmental Entity: _____

Date of Termination or Withholding of Contract: _____

Basis of Termination or Withholding: _____

Offerer certifies that all information provided to the Governmental Entity with respect to State Finance Law §139-k is complete, true and accurate.

By: _____ Date: _____

Signature

Instructions for Completing the DCA-3

Offerer Disclosure of Prior Non-Responsibility Determinations

Background:

New York State Finance Law §139-k(2) obligates a Governmental Entity to obtain specific information regarding prior non-responsibility determinations with respect to State Finance Law §139-j. This information must be collected in addition to the information that is separately obtained pursuant to State Finance Law §163(9). In accordance with State Finance Law §139-k, an Offerer must be asked to disclose whether there has been a finding of non-responsibility made within the previous four (4) years by any Governmental Entity due to: (a) a violation of State Finance Law §139-j or (b) the intentional provision of false or incomplete information to a Governmental Entity. The terms "Offerer" and "Governmental Entity" are defined in State Finance Law § 139-k(1). State Finance Law §139-j sets forth detailed requirements about the restrictions on Contacts during the procurement process. A violation of State Finance Law §139-j includes, but is not limited to, an impermissible Contact during the restricted period (for example, contacting a person or entity other than the designated contact person, when such contact does not fall within one of the exemptions).

As part of its responsibility determination, State Finance Law §139-k(3) mandates consideration of whether an Offerer fails to timely disclose accurate or complete information regarding the above non-responsibility determination. In accordance with law, no Procurement Contract shall be awarded to any Offerer that fails to timely disclose accurate or complete information under this section, unless a finding is made that the award of the Procurement Contract to the Offerer is necessary to protect public property or public health safety, and that the Offerer is the only source capable of supplying the required Article of Procurement within the necessary timeframe. See State Finance Law §§139-j (10)(b) and 139-k(3).

Instructions:

OGS Design and Construction includes this disclosure request regarding prior non-responsibility determinations in accordance with State Finance Law §139-k in its solicitation of proposals or bid documents or specifications or contract documents, as applicable, for procurement contracts. The attached form is to be completed and submitted by the individual or entity seeking to enter into a Procurement Contract, Supplement or Change Order. It shall be submitted to the OGS Design and Construction unit conducting the Governmental Procurement.

This document must accompany each Bid Form, Letter of Interest, or Proposal submitted by an offerer and will be required for any contract amendments over $15,000. This document must also accompany each Emergency Contract Bid Form.

STATE OF NEW YORK - EXECUTIVE DEPARTMENT

OFFICE OF GENERAL SERVICES - DESIGN & CONSTRUCTION GROUP

DOCUMENT 007213
GENERAL CONDITIONS
AUGUST 2010 EDITION

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STANDARD CLAUSES FOR ALL NEW YORK STATE CONTRACTS - APPENDIX A 20

STANDARD CLAUSE FOR CONTRACTOR DEFAULT AND SURETY TAKEOVER - APPENDIX B 28

(Appendix A revised 06/2023)
(Articles 5, 10 and 21 revised in 01/2011)
(Article 23 corrected in 02/2017)

ARTICLE 1 - THE CONTRACT DOCUMENTS

1.1 The Contract Documents consist of the Agreement, the Performance and Payment Bonds, the General Conditions, the Supplementary Conditions, Appendix A, the Drawings and Specifications, Addenda issued prior to the receipt of bids and all subsequent modifications and changes issued pursuant to the General Conditions.

1.1.1 The Performance and Payment Bonds are not a part of Single Trade Contract less than two hundred thousand dollars.

1.2 The Contract Documents form the Contract. The Contract represents the entire and integrated agreement between the parties and supersedes all prior negotiations, representations and agreements, either written or oral including the bidding documents.

1.3 The Contract may not be modified except in accordance with the General Conditions.

1.4 The project is designed in accordance with the Building Codes of New York State and its reference standards. In no instance shall the Contractor deviate from the contract documents except as provided for in the contract. The Contractor shall notify the State of any deviations or conflicts observed that may violate the Building Codes.

ARTICLE 2 - DEFINITIONS

2.1 The following terms shall have the meanings ascribed to them in this Article, wherever they appear in the Contract Documents.

2.2 The term “Agency” means the officer, board, department, commission, authority, fund or public benefit corporation executing the Agreement.

2.3 The term “Commissioner” means the Commissioner of General Services.

2.4 The term “Comptroller” means the Comptroller of the State of New York.

2.5 The term “Contracting Officer” means the Director of Contract Administration of the Design and Construction Group of the Office of General Services or his representative designated in writing.

2.6 The term “Contractor” means the person, firm or corporation executing the Agreement or the successor or assignee of the Contractor approved in writing by the Contracting Officer. If the text requires, the term includes the person, firm or corporation executing any Agreement in furtherance of the Project or the successors or assigns approved in writing by the Contracting Officer.

2.7 The term “days” means calendar days.

2.8 The term “Director” means the Director of Construction of the Design and Construction Group of the Office of General Services who will have general direction and supervision of the Work.

2.9 The term “Director’s Representative” means the employee or agent of the Design and Construction Group designated in writing by the Director as such. Under the general supervision of the Director, the Director’s Representative shall have complete charge of the Work and shall exercise full supervision and direction of the Work. Where the Contract Documents specifically designate a person to perform a function or duty, that person shall be the Director’s Representative but only for the performance of that function or duty. Where the word “directed” appears in the Contract Documents, the words “by the Director’s Representative” shall be deemed inserted thereafter in each case except where it is obviously inappropriate in context.

2.10 The term “Group Director” means the Deputy Commissioner for Design and Construction, Office of General Services.

2.11 The term “liquidated damages” means the amount of money to be assessed against the Contractor for delay in physical completion of the Work.

2.12 The term “physical completion” means the date upon which the Director’s Representative certifies that all deficiencies noted on the Final Inspection List have been corrected and is evidenced by issuance of the Physical Completion Report.

2.13 The term “premises” means all land, buildings, structures and all other things of any kind located on or adjacent to the Site and owned, occupied or otherwise used by the State.

2.14 The term “product data” means manufacturer’s catalog sheets, brochures, standard diagrams, illustrations, schedules, performance charts, test data, standard schematic drawings, specifications and installation instructions.

2.15 The term “Project” means Work at the same Site carried out pursuant to one or more sets of Contract Documents.

2.16 The term “provide” means furnish and install complete, in place and ready for operation and use.

2.17 The term “sample” means physical examples submitted by the Contractor of materials, equipment or workmanship to establish a standard which the Contractor is required to meet and to show the quality, type, range of color, finish, and texture of the material intended to be furnished for the Work.

2.18 The term “shop drawing” means an original drawing prepared by a Contractor, subcontractor, supplier or distributor which illustrates some portion of the Work showing fabrication, layout, fitting or erection details.

2.19 The term “Site” means the area within the contract limit, as indicated by the Contract Documents, including all land, buildings, structures and other things located within those limits.

2.20 The term “State” means the State of New York.

2.21 The term “substantial completion” means that the Work or major milestones there of as contemplated by the terms of this contract are sufficiently complete so that the Work can be used for the purpose for which it is intended.

2.22 The term “Work” means all that which is required of the Contractor by the Contract Documents including labor, materials, tools and equipment.

2.23 The term “Offerer” shall mean the individual or entity, or any employee, agent, consultant or person acting on behalf of such individual or entity that contacts a governmental entity about a governmental procurement during the restricted period of such governmental procurement.

ARTICLE 3 - INTERPRETATION OF CONTRACT DOCUMENTS

3.1 The Contract Documents are complementary, and what is called for by one shall be as binding as if called for by all. It is not intended to include work not properly inferable from the Contract Documents.

3.2 Upon the Contractor’s written request, the Director’s Representative may issue written interpretation or drawings necessary for the proper execution or progress of the Work which interpretation shall be consistent with and reasonably inferable from the Contract Documents.

3.3 The language of the Contract Documents is directed at the Contractor unless specifically stated otherwise.

3.4 The organization of the Specifications into divisions, sections and articles, and the arrangement of Drawings shall not control the Contractor in dividing the Work among subcontractors or in establishing the extent of Work to be performed by any trade.

3.5 In the event of conflicting provisions in the Contract Documents, the drawings will take precedence over the specifications.

3.6 In the event of conflicting provisions within the drawings, the following order of precedence for resolution of the conflict shall apply: the more specific provision will take precedence over the less specific; if not resolved, the less stringent will take precedence over the more stringent; if not resolved, the less expensive item will take precedence over the more expensive. On all drawings, figures take precedence over scaled dimensions.

3.7 In the event of conflicting provisions within the specifications, the following order of precedence for resolution of the conflict shall apply: the more specific provision will take precedence over the less specific; if not resolved, the less stringent will take precedence over the more stringent; if not resolved, the less expensive item will take precedence over the more expensive.

3.8 If during the performance of the work, the Contractor identifies a conflict in the Contract Documents; the Contractor shall promptly notify the Director’s Representative in writing of the conflict and advise as to the course of action the Contractor proposes to follow. The Director’s Representative shall promptly acknowledge the notification in writing and advise the Contractor, pursuant to Paragraph 3.2 of these General Conditions, as to the interpretation to be followed in the performance of the Work.

ARTICLE 4 - SUBMITTALS

4.1 The Contractor and the Director shall adhere to the submittal and scheduling requirements specified in Division 01 - General Requirements.

4.2 The Contractor shall approve all submittals before submitting them. By such approval, the Contractor represents that it has determined and verified field measurements, field construction criteria, materials, catalog numbers, and similar data and that it has checked and coordinated shop drawings, product data and samples with the requirements of the Contract Documents and that it has verified the completeness, correctness, and accuracy of the submittal.

4.3 The Director’s approval of shop drawings, product data and samples shall not relieve the Contractor of responsibility for any deviation from the requirements of the Contract Documents unless the Contractor has previously informed the Director of any anticipated deviation utilizing the required deviation request form,

(available at the OGS D&C website),at the time of submission. Written approval of the specific deviations as outlined on the request form shall be required. The Director's approval shall not relieve the Contractor from responsibility for errors or omissions in the shop drawings, product data or samples.

4.4 Portions of the Work requiring shop drawings, product data, quality assurance information, or sample submittals shall not be commenced until the appropriate submittals have been approved by the Director.

4.5 The Contractor shall deliver to the Director, in the detail and form and at the time the Director shall require, information concerning the Contractor's operations and proposed operations upon the Project all in accordance with Division 01 - General Requirements.

4.6 During the term of this Project, the Director may require any Contractor to modify any schedules which it has submitted either before or after they are approved so that the Work of any contract in furtherance of the Project may be properly progressed and so that changes in the Work or the work of related contracts is properly reflected in the schedules.

4.7 Where indicated under the specific submittal requirements of the specifications, a re-evaluation fee of $250.00 will be assessed against the Contractor for each re-evaluation required of any submittal package that is deemed incomplete, or lacking appropriate content or required format as required by the individual specification section.

ARTICLE 5 - MATERIALS AND LABOR

5.1 All materials, equipment and articles used permanently in the Work which become the property of the State shall be new unless specifically stated otherwise.

5.2 Asbestos Free Materials: All materials used for construction shall be free of asbestos containing materials unless the materials containing the asbestos have been previously approved for use by the State. If asbestos is found in installed products not previously approved by the State, then it will be the responsibility of the contractor to abate the asbestos containing material and replace the work with new asbestos free materials at no cost to the State of New York in compliance with the requirements of the contract.

5.3 Except where specifically provided otherwise, whenever any product is specified by brand name, i.e., manufacturer's or supplier's name or trade name and catalog or model number or name, the intent is not to limit competition but to establish a standard of quality which the Director has determined is necessary. The words "or equal" shall be deemed inserted in each instance. The Contractor may use any product equal to that named in the Contract Documents which is approved by the Director and which meets the requirements of the Contract Documents providing the Contractor gives timely notice of the Contractor's intent in accordance with the submittal and scheduling requirements of Division 01 - General Requirements.

5.4 The Contractor shall have the burden of proving at the Contractor's own cost and expense, to the satisfaction of the Director, that the proposed product is equal to the named product. The Director may establish criteria for product approval. The Director shall determine with absolute discretion whether a proposed product is to be approved.

5.5 If the Contractor fails to comply with the provisions of this Article, or if the Director determines that the proposed product is not equal to that named, the Contractor shall supply the product named.

5.6 The Contractor shall have and make no claim for the extension of time or for damages because the Director requires a reasonable period of time to consider a product proposed by the Contractor or because the Director disapproves such a product.

5.7 Where optional materials or methods are specified, or where "or equal" submissions are approved, the Contractor shall make all adjustments to contingent Work, whether the contingent Work be the Work of its contract or the Work of other Contractor's, necessary to accommodate the option or "or equal" product it selects without extra or additional cost.

5.8 Royalties and Patents: The Contractor shall pay all royalties and license fees. The Contractor shall defend all suits or claims for infringement of any patent rights and shall save the State harmless from loss on account thereof, except that the State shall be responsible for all such loss when a particular design, process or the product of a particular manufacturer is specified.

ARTICLE 6 - CONTRACTOR'S SUPERVISION

6.1 The Contractor shall designate in writing competent supervision and/or management representatives as required below to represent the Contractor at all times with authority to act for the Contractor. All Direction given to the Contractor's Representatives shall be as binding as if given to the Contractor. A Superintendent or Project Manager shall be classified as management representatives included in the Contractor's overhead and shall perform management, supervisory and/or administrative tasks (non labor) only. Individuals listed under this Article shall have the ability to effectively communicate (verbal and written) with all parties associated with the administration/supervision of this contract.

6.1.1 For contracts valued up to $500,000 the contractor shall provide a supervisor for the Contractor's staff who shall be in attendance at the site throughout the active performance of the Work.

6.1.2 For contracts valued from $500,000 to $2,000,000 the Contractor shall provide a Superintendent for the Contractor's staff who shall be in attendance at the site throughout the active performance of the Work until Substantial Completion. Upon Substantial Completion the contractor shall provide a supervisor who shall be in attendance at the site throughout the active performance of the Work until Physical Completion. The Superintendent shall have the authority to direct and schedule the Work, shall attend all project meetings, shall coordinate the Work of subcontractors, and make purchase and cost decisions on behalf of the Contractor.

6.1.3 For contracts valued from $2,000,001 to $5,000,000 the contractor shall provide a Superintendent for the Contractor's staff who shall be in attendance at the site throughout the active performance of the Work until Substantial Completion. Upon Substantial Completion the contractor shall provide a supervisor who shall be in attendance at the site throughout the active performance of the Work until Physical Completion. The Superintendent shall have the authority to direct the Work, attend all project meetings, and coordinate the Work of subcontractors. The Contractor shall also provide a Project Manager who shall attend project meetings, maintain submittal and approval system, and be responsible for change order/field order responses and negotiations. The Contractor shall provide required information to the Director's Representative for the Project Schedule.

6.1.4 For contracts valued from $5,000,001 to $10,000,000 the contractor shall provide a Project Manager and Superintendent for the Contractor's staff that shall be in attendance at the site throughout the active performance of the Work until Substantial Completion. Upon Substantial Completion the contractor shall provide a supervisor who shall be in attendance at the site throughout the active performance of the Work until Physical Completion. The Superintendent shall have the authority to direct the Work, and coordinate the Work of subcontractors. The Project Manager shall attend project meetings, maintain the project schedule, maintain submittal and approval system, and be responsible for change order/field order responses and negotiations.

6.1.5 For contracts valued for more than $10,000,000 the contractor shall provide a Project Manager and Superintendent for the Contractor's staff who shall be in attendance at the site throughout the active performance of the Work until Substantial Completion. Upon Substantial Completion the contractor shall provide a supervisor who shall be in attendance at the site throughout the active performance of the Work until Physical Completion. The Superintendent shall have the authority to direct the Work, attend all project meetings, and coordinate the Work of subcontractors. The Project Manager shall attend project meetings, maintain the project schedule, maintain submittal and approval system, and be responsible for change order/field order responses and negotiations. If at any time there are more than five subcontractors performing work on the site simultaneously an additional Superintendent is required coordinate their Work.

6.2 Should the Director deem any employees of the Contractor incompetent or negligent or for any cause unfit for their duty, the Contractor shall dismiss them and they shall not again be employed on the Work.

6.3 Before any part of the Contract shall be sublet or material purchased, the Contractor shall submit to the Director in writing the name of each proposed subcontractor and supplier and obtain the Director's written consent to such subcontractor and supplier. The names shall be submitted in ample time to permit acceptance or rejection of each proposed subcontractor and supplier by the Director or Contracting Officer without causing delay in the work of the Project. The Contractor shall promptly furnish such information as the Director or Contracting Officer may require concerning the proposed subcontractor's and supplier's ability and qualifications, and Minority/Women Owned Business Enterprises Status. Each request for approval of a subcontractor whose subcontract will be valued at $10,000.00 or more shall also be accompanied by a NYS Vendor Responsibility Questionnaire - For-Profit Construction properly completed and executed by the proposed subcontractor.

6.4 The Contractor's use of subcontractors shall not diminish the Contractor's obligations to complete the Work in accordance with the Contract. The Contractor shall control and coordinate the Work of its subcontractors.

6.5 The Contractor shall be responsible for informing its subcontractors and suppliers of all the terms, conditions and requirements of the Contract Documents including, but not limited to the General Conditions, Supplementary Conditions, the Drawings and Specifications, Appendix A, and changes made by Addenda.

ARTICLE 7 - USE OF PREMISES

7.1 If the Premises are occupied, the Contractor, its subcontractors, and their employees shall comply with the regulations governing access to, operation of, and conduct while in or on the Premises and shall perform

the Work in such a manner as not to unreasonably interrupt or interfere with the conduct of business.

7.2 Any request received by the Contractor from any source other than the Director or the Director's Representative to change the Work or its sequence shall be referred to the Director's Representative for determination.

7.3 The Contractor, its subcontractors and their employees shall not have access to or be admitted to any area of the Premises outside the Site except with the written permission of the Director's Representative.

ARTICLE 8 - PERMITS AND COMPLIANCE

8.1 The Contractor shall obtain, maintain and pay for all permits and licenses legally required and shall give all notices, pay all fees and comply with all laws, rules and regulations applicable to the Work at no additional cost.

ARTICLE 9 - INSPECTION AND ACCEPTANCE

9.1 The Director's Representative will inspect and test the Work at reasonable times at the Site, unless the Director determines to make an inspection or test at a place of production, manufacture or shipment. Such inspection or test shall be conclusive as to whether the material and workmanship inspected or tested conforms to the requirements of the Contract. Such inspection or test shall not relieve the Contractor of responsibility for damage to or loss of the material prior to acceptance, nor in any way affect the continuing rights of the Director to reject the completed Work.

9.2 The Contractor shall, without charge, promptly correct any Work the Director's Representative finds does not conform to the Contract Documents unless in the public interest the Director consents to accept such Work with an appropriate adjustment on the Contract sum and/or to any terms and conditions of the Contract. The Contractor shall promptly remove rejected material from the Premises.

9.3 If the Contractor does not promptly correct rejected Work including the work of other sub-contractors destroyed or damaged by removal, replacement, or correction, the Director may (1) correct such Work and charge the cost thereof to the Contractor; or (2) terminate the Contract in accordance with Article 13 of the General Conditions.

9.4 The Contractor shall furnish promptly without additional charge all facilities, labor, material and equipment reasonably needed to perform in a safe and convenient manner such inspections and tests as the Director's Representative requires.

9.5 The Contractor shall keep the Director's Representative informed of the progress of the Contractor's Work and particularly when the Contractor intends to cover Work not yet inspected or tested. All inspection and tests by the Director's Representative shall be performed in such manner as not to unreasonably delay the Work.

9.5.1 The Contractor shall be responsible for all required tests and appropriate test schedules, approvals and inspections pursuant to the Contract Documents.

9.5.2 The Contractor shall be back-charged with any cost of inspection when the Work is not ready at the time specified by the Director's Representative for inspection, or for deficient work that shall require re-testing.

9.6 Should the Director's Representative determine at any time before acceptance of the entire Work to examine Work already completed by removing, uncovering or testing the same, the Contractor shall, on request, promptly furnish all necessary facilities, labor, materials and equipment to conduct such inspection, examination or test. If such Work is found to be defective or nonconforming in any material respect, the Contractor shall defray all the expenses of such examination and satisfactory reconstruction. If the Work is found to meet the requirements of the Contract Documents, the Contractor shall be compensated for the additional services involved in such examination and reconstruction by order on contract and, if completion of the Work has been delayed thereby, shall receive a suitable extension of time.

9.7 No previous inspection or certificates of payment shall relieve the Contractor from the obligation to perform the Work in accordance with the Contract Documents. The final payment shall not relieve the Contractor of the responsibility for failing to comply with the Contract Documents.

9.8 The Contractor shall remedy all defects, paying the cost of any damage to other work or property of the State resulting there from, which shall appear within a period of one year from the date of physical completion.

9.9 Contractor warrants that Product(s) furnished pursuant to this Contract shall, when used in accordance with the Product documentation, be able to accurately process date/time data (including, but not limited to, calculating, comparing, and sequencing) transitions, including leap year calculations. Where a Contractor proposes or an acquisition requires that specific Products must perform as a package or system, this warranty shall apply to the Products as a system.

9.9.1 Where Contractor is providing ongoing services, including but not limited to: i) consulting, integration, code or data conversion, ii) maintenance or support services, iii) data entry or processing, or iv) contract administration services (e.g. billing, invoicing, claim processing), Contractor warrants that services shall be provided in an accurate and timely manner without interruption, failure or error due to the inaccuracy of Contractor's business operations in processing date/time data (including, but not limited to, calculating, comparing, and sequencing) various date/time transitions, including leap year calculations. Contractor shall be responsible for damages resulting from any delays, errors or untimely performance resulting there from, including but not limited to the failure or untimely performance of such services.

9.9.2 This Date/Time Warranty shall survive beyond termination or expiration of this contract through: a) ninety (90) days or b) the Contractor's or Product manufacturer/developer's stated date/time warranty term, whichever is longer. Nothing in this warranty statement shall be construed to limit any rights or remedies otherwise available under this Contract for breach of warranty.

ARTICLE 10 - ORDERS ON CONTRACT (CHANGE ORDERS)

10.1 The State may make changes by altering, adding to or deleting from the Work, and adjusting the Contract sum accordingly. All changed Work shall be executed in conformity with the terms and conditions of the Contract Documents unless otherwise provided in the order on contract. Any change in the Contract sum or time for completion of the described work of the order on contract shall be contained in the order on contract. Any change in schedule resulting from an order on contract will be issued in accordance with the provisions of Paragraphs 4.6 and 13.5 of these General Conditions.

10.2 No written or oral instructions shall be construed as directing a change in the Work unless in the form of an order on contract signed by the Contracting Officer. The order on contract shall describe or enumerate the Work to be performed, state the amount (if any) to be added to or deducted from the Contract sum and state the time allowed (if any) for the performance of the changed work. If the extent or cost of the Work is not determinable until after the changed Work is performed, the order on contract shall specify the method for determining the cost and extent of the changed Work when completed. If the Contractor disagrees as to any element of the order on contract, the Contractor shall promptly indicate such disagreement in writing by certified mail directed to the Contracting Officer and shall promptly proceed in accordance with the order on contract. The Contractor's letter of disagreement shall identify by number the order on contract with which the Contractor is disagreeing, the elements with which the Contractor disagrees and a statement as to why there is a disagreement on each element. The letter of disagreement shall be accompanied by documentation of every material element of the Contractor's basis for disagreement. The Contracting Officer shall promptly review the Contractor's letter and supporting documentation and advise the Contractor in writing of any modifications to the order on contract or of the confirmation of the order on contract as issued. The Contracting Officer may, in the exercise of discretion, conduct informal discussions or meetings with the Contractor and/or State Officials, employees or agents prior to rendering a decision.

10.3 If the Contractor is required to perform Work for which the Contractor believes it is entitled to an order on contract, the Contractor shall give the Director prompt written notice and await instructions before proceeding to execute such Work. The Contractor shall thereafter proceed diligently with the performance of the contract in accordance with the Director's instructions. The Contractor shall maintain complete cost records including but not limited to time and payroll records, material invoices and delivery tickets, equipment rental and purchase invoices for itself and all subcontractors, suppliers and material-men when the Contractor performs work which the Contractor believes is extra or additional work. Failure to maintain such records shall waive any right to extra and additional costs beyond those costs supported by actual cost records.

10.4 The Contracting Officer shall determine the value of any order on contract by one or more of the methods provided in Division 01 - General Requirements.

10.5 Irrespective of the method used or to be used by the State in determining the value of a change order, the Contractor shall after receipt of a request, promptly submit to the State a detailed breakdown of the Contractor's estimate of the value of the omitted or extra work. The Contractor shall submit evidence, satisfactory to the Contracting Officer, to substantiate each and every item that constitutes his proposal for the change. The State shall promptly respond to such submission.

10.5.1 The contractor shall submit a responsive cost proposal to the Director's Representative in proper form subject to the provisions of this Article. The contractor shall respond no later than 30 days from the date of a "request for proposal" from the Director's Representative. Should the contractor fail to respond or submit the required cost proposal within the 30 day requirement, the State shall determine a fair market value for the work proposed and will issue an order on contract or field order to the contract. The Contractor, by failing to respond or provide an acceptable proposal; waives any claim or rights to any extra and or additional costs as determined by the Contracting Officer.

10.6 Unless otherwise specifically provided for in a change order, the compensation specified therein for extra work includes full payment for both the extra work covered thereby and for any damage or expense caused the Contractor by any delays to other work to be done under the Contract resulting from or on account of said extra work, and the Contractor waives all rights to any other compensation for said extra work, damage or expense.

10.7 No order on contract which creates a liability on the State shall be binding unless approved by the Office of the State Comptroller.

ARTICLE 11 - SITE CONDITIONS

11.1 If the Contractor encounters subsurface or other latent physical conditions at the Site which differ substantially from those shown, described or indicated in such information provided by the State or from any information which is a public record and which subsurface or other latent physical condition could not have been reasonably anticipated from that information or from the Contractor's own inspection and examination of the Site, the Contractor shall give immediate written notice to the Director before any such condition is disturbed. The Director shall promptly investigate and, if it is determined that the conditions substantially differ from those which should have been reasonably anticipated, shall make such changes in the Drawings and Specifications as may be required. If necessary, the Contract sum and completion date shall be adjusted, to reflect any increase or decrease in the cost of, or time required for, performance of the Contract.

ARTICLE 12 - SUSPENSION OF WORK

12.1 The Director may order the Contractor in writing to suspend, delay, or interrupt performance of all or any part of the Work for a reasonable period of time as the Director may determine.

12.2 Upon receipt of a suspension order, the Contractor shall, as soon as practicable, cease performance of the Work as ordered and take immediate affirmative measures to protect such Work from loss or damage.

12.3 The Contractor specifically agrees that a suspension, interruption or delay of the performance of the Work pursuant to this Article for a period or periods not exceeding thirty days in total shall not increase the cost of performance of the Work of this Contract other than costs directly related to demobilization and remobilization for the Work, temporary services costs, equipment rental which cannot be practically suspended and temporary protection measures which are unusual but necessary.

ARTICLE 13 - TIME OF COMPLETION AND TERMINATION FOR CAUSE

13.1 All time limits stated in the Contract are of the essence of the Contract.

13.2 Termination for Cause.

13.2.1 If in the judgment of the Group Director, the Contractor fails or refuses to prosecute the Work in accordance with the Contract, or is failing to complete the Work within the time provided by the Contract, the Group Director may terminate the Contract by written notice. In such event, the Group Director shall order the surety to complete the Work.

13.2.2 If it is determined after the award of the contract that there exists any cause of so serious or compelling a nature, including but not limited to, submission to a contracting agency of a false or misleading statement on a NYS Vendor Responsibility Questionnaire, or in some other form in connection with a bid for or award of this or any other contract or a request for approval of a subcontractor, that it raises questions about the present responsibility of a contractor or subcontractor, the Group Director may terminate the Contract by written notice. In such event, the Group Director may or may not in his sole discretion, order the surety to complete the Work.

13.2.3 The Director will notify the Contractor and Surety that the State is considering declaring the Contractor in default and will arrange a hearing with the Contractor and the Surety to discuss methods of performing and completing the contract work.

13.2.4 If the State formally declares the contractor in default the State will demand upon the Surety to complete any and all remaining work pursuant to the terms of the Contract and the Surety Takeover Guidelines incorporated as Appendix B. The Surety may undertake to perform and complete the work itself, through its agents or through independent contractors approved by the State. The State will agree to pay the balance of the Contract price to the Surety in accordance with the terms and conditions of the Contract or to the designee authorized in writing by the surety upon acceptance of the Surety's completion plan pursuant to Appendix B. incorporated herein.

13.2.5 The surety agrees to complete any investigation into the default of the Contractor and advise the Group Director as to its intended course of action within ten days of receipt of the written notice of default. That notice will detail the underlying reasons for the default and provide pertinent documentation including the surety takeover guidelines of the Contracting Officer. Any request by a surety for execution of a takeover agreement, shall be delivered to

the Contracting Officer for consideration, within the same ten day period. No changes in the terms and conditions of the Contract will be considered. All rights remedies and defenses of the parties are reserved and no rights, remedies or defenses of the parties are waived, by virtue of the surety's agreement to assume contract performance under the bond

13.2.6 The Surety may elect to forfeit the remaining penal sum of the Performance Bond within twenty days of notification of default by the State; with no additional penalties imposed, upon the execution of a release prepared by the State. The State will determine the value of the remaining Work based upon its investigation of the Work in place against payments previously authorized. As soon as practical the Surety will tender payment therefore to the State.

13.2.7 If the surety fails or refuses to complete the Work within twenty five days of the notification of the contractors default or if the Surety fails or refuses to complete the work within the time frames allotted by the State, the Group Director may take over the Work and prosecute it to completion by contract publicly let or otherwise, and may take possession of and utilize in completing the Work, such of the Contractor's materials, equipment and plant as may be on the Site of the Work. Whether or not the right to terminate is exercised, the Contractor and the Surety shall be liable for any damage to the State resulting from the failure or refusal to complete the Work in accordance with the Contract or the failure to complete the Work within the time provided by the Contract.

13.2.8 Should the Surety fail to commence the work the Group Director will notify the Surety that the State is considering declaring the Surety in default and will arrange a hearing with the Surety to discuss methods of performing and completing the contract work. It is the policy of the Office of General Services, Design and Construction Group to let a Contract for the remaining work after the 21st day of the demand upon the Surety to complete the Work pursuant to the terms and conditions of the Contract, and the Performance Bond filed with the Office of the State Comptroller.

13.3 The amount of Liquidated Damages shall be the product of $1,000.00 times the number of days of delay in physical completion of the work. Upon the assessment of such damages the State may withhold the sum of the damages contemplated from payments to avoid an overpayment to any firm where damages would apply.

13.3.1 If the Group Director terminates the Contract, damages shall consist of liquidated damages, if any, until the Work is physically completed, plus any increased costs occasioned the State in completing the Work.

13.3.2 If the Group Director does not terminate the Contract, the damages shall consist of liquidated damages, if any, until the Work is physically completed.

13.4 The Contract shall not be so terminated nor the Contractor charged with resulting damage if:

13.4.1 The delay in the completion of the Work arises from unforeseeable causes beyond the control and without the fault or negligence of the Contractor, including but not restricted to, acts of God, acts of the public enemy, acts of the State in either its sovereign or contractual capacity, acts of another contractor in the performance of a contract with the State, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, unusually severe weather, or delays of subcontractors or suppliers arising from unforeseeable causes beyond the control and without the fault or negligence of both the Contractor and such subcontractors or suppliers, and

13.4.2 The Contractor notifies the Director in writing of the causes of delay within ten days from when the Contractor knew or ought to have known of any such delay.

13.5 The Director will ascertain the facts and the extent of the delay and extend the time for completing the Work when, in the Director's judgment, the findings of fact justify such an extension, and the Director's findings of fact shall be final and conclusive on the parties.

13.6 If after notice of termination of the Contract, it is determined for any reason the Contractor was not in default or that the delay was excusable, the rights and obligations of the parties shall be the same as if the notice of termination had been issued pursuant to the termination for convenience clause.

13.7 The rights and remedies of the State provided in this Article are in addition to any other rights and remedies provided by law or under this Contract.

13.8 The State, as defined in Article 2 of these General Conditions, reserves the right to terminate this contract in the event it is found that the certification filed by the offerer in accordance with New York State Finance Law §139-k was intentionally false or intentionally incomplete. Upon such finding, the Governmental Entity may exercise its termination right by providing written notification to the offerer in accordance with the written notification terms of the contract.

ARTICLE 14 - TERMINATION OF CONTRACTOR'S EMPLOYMENT FOR THE CONVENIENCE OF THE STATE OF NEW YORK

14.1 The Group Director may terminate this Contract whenever the public interest so requires by delivering to the Contractor a notice of termination specifying the extent to which performance of Work under the Contract is terminated and the date upon which such termination becomes effective. Upon receipt of the notice of termination, the Contractor shall act promptly to minimize the expenses resulting from such termination. The State shall pay the Contractor the sum of:

14.1.1 The costs actually incurred by the Contractor, subcontractors, and sub-subcontractors or their suppliers up to the effective date of such termination, and

14.1.2 The cost of settling and paying claims, provided the concurrence of the Contracting Officer is obtained prior to agreeing to any such settlement, arising out of the termination of Work under subcontracts or orders exclusive of the amounts paid or payable on account of supplies or materials delivered or services furnished by the subcontractor prior to the effective date of the notice of termination of Work under this Contract, which amounts shall be included in the cost on account of which payment is made under 14.1.1 above, and

14.1.3 An amount determined by adding to the amount of the costs under 14.1.1 above a sum equal to 20% (comprised of 10% overhead and 10% profit) thereof, provided, however, that if it appears that the Contractor would have sustained a documentable loss on the entire Contract had it been completed, an appropriate adjustment shall be made reducing the amount to be paid under this Article to reflect the indicated rate of loss.

14.2 In no event shall the Contractor's compensation exceed the total Contract amount.

14.3 The detailed estimate or amount of progress payments made to the Contractor prior to the day termination was effective shall not be conclusive evidence of costs incurred but progress payments shall be offset against any payment which the State makes to the Contractor as a result of such termination.

ARTICLE 15 - DISPUTES

15.1 The Contractor specifically agrees to submit, in the first instance, any dispute or disagreement relating to the performance of this Contract to the Group Director, who shall render a decision in writing and furnish a copy thereof to the Contractor. The Contractor agrees that this clause does not apply to any dispute or disagreement which involves delay, acceleration, interference or any other act or omission constituting a breach of contract; any matter relating to extensions of time, bonuses or liquidated damages; to the value of any order on contract or field order (issued pursuant to Division 01 - General Requirements); any termination for cause or convenience; or to termination costs allowable pursuant to contract.

15.2 The Contractor must request such decision in writing by certified mail no more than fifteen days after the Contractor knew or ought to have known of the facts which are the basis of the dispute or disagreement. Such writing shall identify the nature of the dispute or disagreement; identify the person who rendered the decision or interpretation involved and the date of the decision or interpretation with which the Contractor disputes or disagrees, attaching a copy of such decision or interpretation; contain a statement of the contractual basis for the dispute or disagreement; and identify the relief sought.

15.3 The Group Director may cause an investigation to be made of the circumstances involving the dispute or disagreement and may cause a fact-finding proceeding to be conducted before rendering the decision.

15.4 The Contractor agrees that the decision of the Group Director shall be final and conclusive. Nothing in this Contract shall be construed as making final the decision of any administrative official upon a question of law.

ARTICLE 16 - STATUTORY REQUIREMENTS FOR UTILIZATION OF MINORITY AND WOMEN OWNED BUSINESS ENTERPRISES

16.1 Pursuant to Section 313 of Article 15-A of the Executive Law of the State of New York, the Director of the Division of Minority and Women's Business Development has promulgated rules and regulations (Parts 140 through 145 of Subtitle N of Title 9 New York Code of Rules and Regulations) (the "Regulations") for the purposes of ensuring that certified Minority and Women owned Business Enterprises shall be given the opportunity for meaningful participation in the performance of State contracts and to facilitate the award of a fair share of State contracts and subcontracts to such business enterprises.

16.2 The Contractor shall make a good faith effort to solicit active participation in the Work by enterprises identified in the directory of certified businesses obtainable from the Division of Minority and Women's Business Development, New York State Department of Economic Development.

16.3 The Contractor agrees, as a material condition of this contract, to be bound by the provisions of Section 316 of Article 15-A of the Executive Law of the State of

New York which relates to the resolution of disputes which may arise under this Article.

16.4 The Contractor agrees to include the provisions of Paragraphs 16.2 and 16.3 of these General Conditions in every subcontract it enters into as to Work in connection with this Contract in such a manner that the provisions will be binding upon such subcontractor. However, the provisions of this paragraph shall not be binding upon the Contractor or its subcontractors in the performance of work or the provision of services that are unrelated, separate or distinct from this Contract as expressed by its terms.

16.5 The Regulations referred to in Paragraph 16.1 of these General Conditions require, among other things, that a bidder or proposer for a State contract submit a utilization plan which shall identify certified Minority or Women Owned Business Enterprises which the bidder/proposer intends to use in connection with the performance of the proposed State contract. Such a utilization plan shall be submitted after bids are opened but prior to contract award.

16.5.1 Pursuant to the Regulations: (1) the Commissioner may require the submission by the Contractor of compliance reports relating to the implementation of and adherence to the utilization plan in performing the Contract; (2) the Commissioner shall allow the Contractor to apply for a partial or total waiver of the Minority and Women Owned Business participation requirements; (3) the Contractor may file a complaint with the Executive Director of the Division of Minority and Women's Business Development regarding a denial of a request for waiver of Minority and Women Owned Business participation requirements; (4) the Commissioner may file a complaint with the Executive Director of the Division of Minority and Women's Business Development in the event the Contractor fails to comply with the Minority and Women Owned Business participation requirements set forth in this Contract; and (5) the Commissioner may disqualify the Contractor's bid or proposal as being non-responsive for failure to remedy notified deficiencies contained in the Contractor's utilization plan after an administrative hearing on the record, reviewing all grounds for disqualification stated by the Commissioner and taking into consideration all the criteria set forth in Section 313 of the Executive Law.

16.5.2 The Contractor is referred to the entirety of the provisions of Section 316 of Article 15-A of the Executive Law of the State of New York and of the Regulations for the Contractor's full familiarization with their applicable provisions as terms of this Contract.

ARTICLE 17 - COORDINATION OF SEPARATE CONTRACTS

17.1 The State may award other contracts which affect the Work of this Contract. In that event, the Contractor shall coordinate its Work with the work of other contractors in such manner as the State may direct. Each contractor shall control and coordinate the work of its subcontractors, if any. The State shall approve or require the modification of the work schedules of all contractors to the end that the Project may be progressed as expeditiously as the case permits.

17.2 If any part of the Work depends for proper execution or results upon the work of any other contractor, the Contractor shall inspect and promptly report in writing to the Director's Representative any defects in such work. The Contractor's failure to inspect and report shall constitute an acceptance of the other contractor's work as fit and proper for the reception of the Contractor's Work.

17.3 The Director's Representative shall issue appropriate directions and take such other measures to coordinate and progress the Work as may be reserved to the State in the Contract, and which an ordinarily reasonable project owner in similar circumstances would be expected to take.

17.4 The award of more than one contract for the Project requires sequential or otherwise interrelated contractor operations, and will involve inherent delays in the progress of any individual contractor's work. Accordingly, the State does not guarantee the unimpeded operations of any contractor. The Contractor acknowledges these conditions, and understands that the Contractor shall bear the risk of all delays caused by the presence or operations of other contractors engaged by the State and delays attendant upon any State-approved construction schedule.

17.5 The State shall not be liable for delays which occur by reason of any contractor's failure to comply with directions of the State or because of the neglect, failure or inability of any contractor to perform its work efficiently.

17.6 The Contractor shall defend, indemnify and hold the State harmless from any and all claims or judgments of damages and from costs and expenses to which the State may be subjected or which it may suffer or incur by reason of or based upon an allegation of the Contractor's failure to promptly comply with the directions of the Director's Representatives.

17.7 Should the Contractor sustain any damage through any act or omission of any other contractor having a contract with the State for the performance of work upon the Site of work which may be necessary to

be performed for the proper prosecution of the Work to be performed hereunder, or through any act or omission of a subcontractor of such contractor, the Contractor shall have no claim against the State for such damage, but shall have a right to recover such damage from the other contractor under the provision similar to the following provision which has been or will be inserted in the contract with such other contractors.

17.8 Should any other contractor having or who shall hereafter have a contract with the State for the performance of work upon the Site sustain any damage through any act or omission of the Contractor hereunder or through any act or omission of any subcontractor of the Contractor, the Contractor agrees to reimburse such other contractor for all such damages and to indemnify and hold the State harmless from all such claims.

ARTICLE 17A - DELAYS

17A.1 For the purposes of this Contract, the term delay includes delay, disruption, interference, inefficiencies, impedance, hindrance and acceleration.

17A.2 The Contractor agrees to make claim only for additional costs as defined in Document 012200, section 1.01, paragraph H from causes listed below, attributable to delay in the performance of this contract, occasioned by any act or omission to act by the State or any of its representatives. The Contractor also agrees that delay from any other cause shall be compensated for solely by an extension of time to complete the performance of the work.

17A.2.1 The failure of the State to take reasonable measures to coordinate and progress the work.

17A.2.2 Extended delays attributable to the State in the review or issuance of orders on contract or field orders, in shop drawing reviews and approvals or as a result of the cumulative impact of multiple orders on contract, which constitute a qualitative change to the project work and which have a verifiable impact on project costs.

17A.2.3 The unavailability of the site for such an extended period of time which the Director determines to significantly affect the scheduled completion of the contract.

17A.2.4 The issuance by the Director of a stop work order relative to a substantial portion of work for a period exceeding thirty days.

17A.3 The Contractor shall provide "notice of claim" of an anticipated claim for delay to the Contracting Officer by personal service or certified mail no more than fifteen days after the Contractor knew or ought to have known of the facts which form the basis of the claim. The Contracting Officer shall acknowledge receipt of the Contractor's notice, in writing, within five days. The Contractor agrees that the State shall have no liability for any damages which accrue more than fifteen days prior to the delivery or mailing of the required notice. The notice shall at a minimum provide a description of any operations that were, are being, or will be delayed, the date(s) and reasons for the delay, and, to the extent known, the information required by Paragraph 17A.6 of these General Conditions. In no case, shall oral notice to the Director's Representative or contracting officer constitute notice under this provision or be deemed to constitute a waiver of the written notice requirement. In no case, shall written notice to the Director's Representative or any other individual other that the Contracting Officer constitute notice under this provision or be deemed to constitute a waiver of the written notice requirement. The Contracting Officer is located at the following location:

Division of Contract Administration
Contracting Officer
35th Floor, Corning Tower
Albany, New York 12242

17A.4 Failure by the Contractor to adequately progress the completion of the work will be considered in determining the causes of delay. For any claim asserted under this Article, the Contractor shall keep detailed written records of the costs and shall make them available to the Contracting Officer at any time for the purposes of audit and review. Failure by the Contractor to provide the required written notice or to maintain and furnish records of the costs of such claims to the Contracting Officer shall constitute a waiver of the claim.

17A.5 The provisions of this Article apply only to claims for extra or additional costs attributable to delay and do not preclude determinations by the Director allowing reimbursement for additional costs for extra work pursuant to Article 10 of these General Conditions.

17A.6 REQUIRED CONTENT OF CLAIM SUBMISSION.

17A.6.1 As noted in Paragraph 17.A.3 of these General Conditions, all claims for delay shall be submitted in writing to the Contracting Officer and must be in sufficient detail to enable the Contracting Officer to ascertain the basis and the amount of each claim. The following information shall be provided by the Contractor upon request of the Contracting Officer if not previously supplied:

a. A description of the operations that were delayed, the reasons for the delay and an explanation of how they were delayed.

b. A detailed factual statement of the claim providing all necessary dates, locations and items of work affected by the claim.

c. An as-built chart, "Critical Path Method" scheme or other diagram or chart depicting in graphic form how the operations were or are claimed to be adversely affected including the report and conclusions of all engineering and scheduling experts or other consultants, if any.

d. The date on which actions resulting in the claim occurred or conditions resulting in the claim became evident.

e. A copy of the approved project schedule and a copy of the "notice of claim" required for the specific claim by Paragraph 17A.3 of these General Conditions.

f. To the extent known, the name, function, and activity of each State official, employee or agent, involved in, or knowledgeable about facts that gave rise to such claim.

g. The name, function, and activity of each Contractor or subcontractor officer, or employee, involved in, or knowledgeable about facts that gave rise to such claim.

h. The identification of any pertinent documents, and the substance of any material oral communication relating to such claim.

i. The amount of additional compensation sought and a breakdown of that amount into the categories specified in Division 01 - General Requirements.

j. If an extension of time is also requested, the specific number of days for which it is sought and the basis for such request as determined by an analysis of the construction progress schedule.

17A.7 REQUIRED CERTIFICATION OF CLAIMS.

17A.7.1 When submitting any notice of claim or claim data, the Contractor must certify in writing and under oath:

a. That supporting data is accurate and complete to the Contractor's best knowledge and belief;

b. That the amount of the claim and the claim itself accurately reflects what the Contractor in good faith believes to be the State's liability.

17A.7.2 If the Contractor is an individual, the certification shall be executed by that individual. If the Contractor is not an individual, the certification shall be executed by a company official in charge of the Contractor's operations pertaining to this contract or an officer or general partner of the Contractor having overall responsibility for the conduct of the Contractor's affairs.

17A.7.3 Failure to timely comply with any of the requirements of Article 17A for the submission of any claim for delay may constitute grounds for denial of such claim.

ARTICLE 18 - RESPONSIBILITY FOR DAMAGE

18.1 The Contractor shall faithfully perform and complete all of the Work required by the Contract, and has full responsibility for the following risks:

18.1.1 Loss or damage, direct or indirect, to any property owned by the State or to the Work including the building or structure in which the Work is being performed, or any other construction in progress whether being performed by any other contractor or the State, or to any plant, equipment, tools, materials or property furnished, used, installed or received by the Director under this Contract or any other contract. The Contractor shall bear all such risk of loss or damage, until all of the Work covered by the Contract has been finally accepted. In the event of such loss or damage the Contractor shall forthwith repair, replace, and make good any such loss or damage without additional cost.

18.1.2 Injury to persons (including death resulting there from), or damage to property caused by an occurrence arising out of the performance of this Contract for which the Contractor may be legally liable under the laws of torts.

18.2 The Contractor, however, shall not be responsible for damages resulting from faulty design or from willful acts of State officials or employees or from negligence resulting solely from acts or omissions of the State, its officers or employees. Nothing herein shall vest in third parties any right of action beyond such as may legally exist irrespective of this Article.

18.3 The Contractor shall indemnify and save harmless the State, its employees and agents from suits, actions, damages, and costs of every name and description relating to the performance of this Contract during its prosecution and until the acceptance thereof, and the State may retain such moneys from the amount due the Contractor as may be necessary to satisfy any claim for damages recovered against the State. The Contractor's obligations under this paragraph shall not be deemed waived by the failure of the State to retain the whole or any part of such moneys due the Contractor, nor shall such obligation be deemed limited or discharged by the enumeration or procurement of any insurance for liability for damages imposed by law upon the Contractor, subcontractor or the State.

ARTICLE 19 - INSURANCE - BUILDER'S RISK, LIABILITY AND WORKERS' COMPENSATION

19.1 Before commencing the Work and until the established Physical Completion date, all insurance required by the Contract shall be obtained at the sole cost and expense of the Contractor; and the Contractor shall furnish to the Contracting Officer a Certificate of

Insurance in a form satisfactory to the Contracting Officer showing that the Contractor has complied with this Article. Insurance shall be maintained with insurance carriers licensed to do business in New York State and acceptable to the Contracting Officer; shall be primary and non-contributing to any insurance or self insurance maintained by OGS; and shall be endorsed to provide written notice be given to the Contracting Officer at least thirty days prior to the cancellation, non-renewal, or material alteration of such policies, which notice, evidenced by return receipt of United States Certified Mail, any notice shall be addressed to:

Division of Contract Administration
Director
35th Floor, Corning Tower
Albany, New York 12242

19.1.1 The endorsement shall name The People of the State of New York, its officers, agents, employees and the assigned construction manager as additional insureds there under. This additional insured shall be primary and non-contributory. (General Liability Additional Insured Endorsement shall be on Insurance Service Office's (ISO) form number CG 20 10 11 85 and a copy of which shall be furnished along with the Certificate of Insurance.) The Contracting Officer may modify the provisions of this Article when deemed in the best interest of the State by order on contract or field order.

19.1.2 The Contractor, throughout the term of this Contract, or as otherwise required by this Contract, shall obtain and maintain in full force and effect on an occurrence form, the following insurance with limits not less than those described in this article, and as required by the terms of this Contract, or as required by law, whichever is greater. If such insurance contains an aggregate limit, it shall apply separately on a per job, per location basis.

19.1.3 The Contractor shall be solely responsible for the payment of all deductibles and Self Insured Retentions.

19.1.4 Not less than thirty days prior to the expiration date or renewal date of any insurance policies reflected on such certificates, the Contractor shall supply OGS updated replacement Certificates of Insurance, and amendatory endorsements.

19.2 The kinds and amount of insurance is as follows:

19.2.1 Workers' Compensation Insurance and Disability Benefits Law. A policy covering the obligations of the Contractor in accordance with the Workers' Compensation Law and the Disability Benefits Law covering all operations under the Contract, whether performed by the Contractor or by its subcontractor.

19.2.2 Commercial General Liability, and if necessary, Commercial Umbrella Liability Insurance with a limit of not less than $2,000,000 each occurrence. Such liability shall be written on the ISO occurrence form CG 00 01, or a substitute form providing equivalent coverages and shall cover liability resulting in Bodily Injury, Property Damage, Personal Injury or loss of use arising from premises operations, independent contractors, products-completed operations, broad form property damage, personal & advertising injury, cross liability coverage, liability assumed in a contract (including the tort liability of another assumed in a contract) and explosion, collapse & underground coverage.

If such insurance contains an aggregate limit, it shall apply separately on a per job, per location basis.

19.2.3 Comprehensive Business Automobile Liability, and if necessary, Commercial Umbrella Liability Insurance with a limit of not less than $2,000,000 each accident. Such insurance shall cover liability arising out of any automobile including owned, leased, hired and non-owned automobiles.

19.2.4 Builder's Risk: The Contractor shall be liable for any and all damages and losses to the Project prior to the State of New York's acceptance of the Project as fully completed except that the Contractor shall not be liable for:

19.2.4.1 Losses covered by the Builder's Risk property insurance provided by the State of New York; except that the Contractor shall be liable for the applicable deductible.

19.2.4.2 All policies shall be issued by insurance companies licensed to conduct such business under the laws of the State of New York, shall be written for the benefit of the State of New York and for the Contractor as their interests may appear, and shall run until the contract physical completion date. The State of New York must be listed as loss payee pursuant to this policy. Policies expiring on a fixed date before physical completion must be renewed and re-filed not less than thirty days before such expiration date.

19.2.5 If the work involves abatement, removal, repair, replacement, enclosure, encapsulation and/or disposal of any petroleum, petroleum product, hazardous material or substance including asbestos, lead or mold, and those as defined by applicable State and federal laws and regulations, the Contractor shall procure, or otherwise obtain through an approved subcontractor, and maintain in full force and effect throughout the term of the contract, and for two years after completion hereof, pollution legal liability insurance with limits of not less than $5,000,000, providing coverage for bodily injury and property

damage, including loss of use of damaged property or of property that has not been physically injured. Such policy shall provide coverage for actual, alleged or threatened emission, discharge, dispersal, seepage, release or escape of pollutants, including any loss, cost or expense incurred as a result of any cleanup of pollutants or in the investigation, settlement or defense of any claim, suit, or proceedings against OGS arising from Contractor's work. The State of New York shall be named as additional insured and this shall be primary.

19.2.5.1 If automobiles are to be used for transporting hazardous materials, the Contractor shall provide pollution liability broadened coverage for covered autos (endorsement CA 99 48) as well as proof of MCS 90.

19.3 The Contractor may provide the required proof of insurance on industry forms provided that no other endorsements exclude, delete or restrict those coverage's provided for by this article. It is required that companies affording coverage list the company name in full as filed with the New York State Insurance Department. The contract number and project location must be provided in order to approve the certificate.

19.4 Should the Contractor fail to provide or maintain any insurance required by law the Contract will be considered null and void. Further, no contractor is permitted to access the project site without providing proof of proper insurance to the Contracting Officer or his designated representative. No payments will be authorized by the Contracting Officer to any firm who fails to comply with the provisions of this Article.

ARTICLE 20 - OCCUPANCY PRIOR TO COMPLETION AND ACCEPTANCE

20.1 The State shall have the right to take possession of or use any completed or partially completed portion of the Work. Written notice of such possession shall be given to the Contractor by the Director. The notice shall identify the date when such possession shall commence and the area, equipment or system involved. Written notice shall also be given the Contractor for any cessation of such possession by the State. Such possession or use shall not be deemed an acceptance of any Work. While the State is in such possession, the Contractor, notwithstanding the provisions of Article 18 of the Contract, shall be relieved of the responsibility for loss or damage to the Work except for that resulting from the Contractor's fault or negligence. If such possession or use by the State delays the progress of the Work or causes additional expense to the Contractor, an adjustment in the Contract price and/or the time of completion shall be made and the Contract modified in writing accordingly. The provisions relating to an adjustment in the Contract price or the time of completion contained in this paragraph shall not apply to occupancy or possession after Substantial Completion.

ARTICLE 21 - PAYMENT

21.1 The Contractor shall submit monthly, or at more frequent intervals if permitted in writing by the Contracting Officer, a requisition for a progress payment to the designated payment office for Work performed and materials furnished up to the date of the requisition, less any amount previously paid to the Contractor. Except as otherwise provided by this Contract, the Contracting Officer shall approve and cause to be paid the requisition for the progress payment less an amount necessary to satisfy any claims, liens or judgments against the Contractor which have not been suitably discharged and less any amount authorized by law to be retained. The requisition shall be in such form and supported by such evidence as the Contracting Officer may reasonably require. The designated payment office is listed as follows:

Division of Contract Administration
Bureau of Contract Performance
35th Floor, Corning Tower
Albany, New York 12242

21.1.1 For those contracts designated as Labor and Material reimbursement or similar type contracts, the contractor shall submit to the Contract Payment Audit Group no later than 60 days from the period of when the work occurred, acceptable proof of labor and material costs specific to the approved scope of work as verified by the Directors Representative, to the Contracting Officer for audit, verification and approval prior to the submission of any payment. The Contract Payment Audit Group is located at the following location:

Division of Contract Administration
Contract Payment Audit Group
35th Floor, Corning Tower
Albany, New York 12242

21.1.2 The submittal of cost for reimbursement to the Contractor shall be in such form and supported by such evidence as the Contracting Officer may reasonably require.

21.1.3 For those contracts designated as Electronic Contractor Requisition (ECR) eligible, if the contractor agrees to participate (participation is not mandatory – a contractor may still elect to submit paper requisitions) , the contractor shall provide an Electronic Contractor Requisition (ECR) Program Certification form which shall become part of this agreement. The contractor further certifies that the individual certifying the requisition is duly authorized to undertake requisitioning transactions. The contractor understands that the State will rely on the information disclosed in the contractor's requisition consistent with all of the

provisions of this Article. A contractor need not submit electronic requisitions in order to receive electronic payments.

21.2 The Director or the Contracting Officer may refuse to approve the requisition or a portion of it if the Contractor is failing or refusing to prosecute the Work in accordance with the Contract.

21.3 Payment will be made for approved materials not yet incorporated in the Work which are in short and/or critical supply and for materials determined to be specifically fabricated for the project. Requisitions which require payment for materials shall be accompanied by a notarized statement certifying that the materials for which payment is requisitioned are the Contractor's property and have been suitably stored and insured. The Contractor shall provide such evidence of the value of the material stored as the Contracting Officer may reasonably require. The Contractor shall have full continuing responsibility to insure and protect such materials and maintain them in proper condition to fulfill Contract requirements when installed.

21.4 When the Work or major milestones thereof as contemplated by the terms of this Contract are substantially completed, the Contractor shall submit to the Contracting Officer a requisition for payment of the remaining amount of the Contract balance. Upon receipt of such requisition the Contracting Officer shall, except as otherwise provided by this Contract, approve and cause to be paid the remaining amount of the Contract balance less two times the value of any remaining items to be completed and an amount necessary to satisfy any claims, liens or judgments against the Contractor which have not been suitably discharged. As the remaining items of Work are satisfactorily completed or corrected, the Contracting Officer shall cause to be paid, upon receipt of a requisition, for these remaining items less an amount necessary to satisfy any claims, liens or judgments against the Contractor which have not been suitably discharged.

21.5 No more than 60 days after the issuance of the Physical Completion Report, the Contractor shall submit to the Contracting Officer or his designated representative a requisition for payment of the remaining Contract balance. Upon receipt of this requisition, the Contracting Officer shall, except as otherwise provided by this Contract, approve and cause such requisition to be paid less any amount necessary to satisfy any claims, liens or judgments against the Contractor which have not been suitably discharged. The Contractor waives any claim or right to payment of any contract balance which has not been requisitioned for payment within 60 days of the issuance of the Physical Completion Report.

21.6 The final certificate letter will not be issued until all the labor and material required by the Contract has been furnished and completed, all disputes and claims relating to the performance of the Contract considered and disposed of and all accounts for extra work and materials and allowances for omissions have been rendered and considered. The Contractor waives any claim or right to additional compensation which has not been submitted in writing via certified or registered mail to the Contracting Officer pursuant to Article 17A, within thirty days of the issuance of the Physical Completion Report.

21.7 The final certificate letter will constitute the acceptance of the Work by the State, except as to Work thereafter found to be defective. The date of such certificate shall be regarded as the date of acceptance of the Work.

21.8 No payment will be made to a foreign Contractor until it furnishes satisfactory proof that it has paid all taxes required of foreign Contractors under the provisions of the New York State Tax Law. A foreign Contractor as used in this paragraph shall mean a Contractor denominated "foreign" by the New York State Tax Law.

21.9 The contractor is advised that consistent with Subdivision 3-a, of Section 220 of the Labor Law, the filing of certified payroll records is a condition precedent to payment of any sums due and owing to any person performing work on this project. The failure to file pursuant to this section will result in a payment delay until such time as the filing occurs.

21.10 The Contractor acknowledges that it will not receive payment on any requests for payment unless the contractor complies with the State Comptroller's electronic payment deposit procedures Payments requested by the contractor will only be facilitated via electronic deposit, except where the Commissioner has expressly authorized payment by paper check.

ARTICLE 22 - AUDITS AND RECORDS

22.1 The Group Director, the Comptroller or their representatives shall have the right to examine all books, records, documents, and other data of the Contractor, subcontractors, material-men or suppliers relating to the bidding, pricing or performance of this Contract or any change or modification thereto for the purpose of evaluating the accuracy, completeness, and currency of the cost or pricing data submitted. This right of examination shall extend to all documents necessary to permit adequate evaluation of the cost or pricing data submitted along with the computations and projections used therein.

22.2 The above materials shall be made available at the office of the Contractor, subcontractors, material-men or suppliers at all reasonable times for inspection,

audit or reproduction until the expiration of six years from the date of the final certificate for the Contract.

22.3 If this Contract is completely or partially terminated, the records relating to the Work terminated shall be made available for a period of six years from the date of any resulting final settlement.

22.4 Records which relate to the Disputes Clause of this Contract or litigation or the settlement of claims arising out of the performance of this Contract shall be made available until such appeals, litigation or claims have been disposed of.

22.5 The Contractor shall insert a clause containing all of the provisions of Paragraphs 22.1 to 22.4 of these General Conditions in all subcontracts or purchase orders issued hereunder.

22.6 The Contractor shall make available to the Contracting Officer, upon written request, all records required to be kept by this Contract or by Article 3-A of the Lien Law. The failure to provide said records upon the receipt of the written request shall bar any recovery for claimed extra or additional costs under this Contract.

ARTICLE 23 – LABOR LAW PROVISIONS

23.1 The contractor shall post, in a location designated by the State, a copy of the New York State Department of Labor schedules of prevailing wages and supplements for this Project, a copy of all re-determinations of such schedules for the Project, the Workers' Compensation Law Section 51 notice, all other notices required by law to be posted at the Site, the Department of Labor notice that this Project is a public work project on which each worker is entitled to receive the prevailing wages and supplements for the occupation at which he or she is working, and all other notices which the State directs the contractor to post. The contractor shall provide a surface for such notices which is satisfactory to the State. The contractor shall maintain such notices in a legible manner and shall replace any notice or schedule which is damaged, defaced, illegible or removed for any reason. The contractor shall post such notices before commencing any Work on the Site and shall maintain such notices until all Work on the Site is complete.

23.2 The contractor shall distribute to each worker for this Contract a notice, in a form provided by the State, that this Project is a public work project on which each worker is entitled to receive the prevailing wage and supplements for the occupation at which he or she is working. Worker includes employees of contractor and all Subcontractors and all employees of Suppliers entering the Site. Such notice shall be distributed to each worker before he or she starts performing any Work of this Contract. At the time of distribution, the contractor shall have each worker sign a statement, in a form provided by the State, certifying that the worker has received the notice required by this section, which signed statement shall be maintained with the payroll records required by Paragraph 23.3 of these General Conditions.

23.3 The contractor shall maintain on the Site the original certified payroll or certified transcripts thereof which the contractor and all of its Subcontractors are required to maintain pursuant to New York Labor Law Section 220. The contractor shall maintain with the payrolls or transcripts thereof, the statements signed by each worker pursuant to Paragraph 23.2 of these General Conditions.

23.4 A contractor or subcontractor who is required under New York Labor Law Section 220 to maintain transcripts of payroll records must submit to the contracting agency a transcript of the original payroll record within thirty days of issuance of its first payroll and every thirty days, thereafter. The copy of the payroll record must be subscribed and affirmed as true under penalty of perjury. The copy must include the contract number and should be directed to the Director's Representative at the job site. The Directors Representative is hereby designated as the individual responsible for the receipt, collection and review for authenticity of payroll records filed for this contract, consistent with Article 23.4, General Conditions and subparagraph (iii) and (iv) Section 220 Labor Law.

23.5 In accordance with New York Labor Law §222-H, the contractor agrees where the total cost of all work to be performed under the contract is at least two hundred fifty thousand dollars; all laborers, workers, and mechanics employed in the performance of this contract on the public work site, either by the contractor, sub-contractor or other person doing or contracting to do the whole or a part of the work contemplated by this contract, shall be certified prior to performing any work on the project as having successfully completed a course in construction safety and health approved by the United States department of labor's occupational safety and health administration that is at least ten hours in duration.

23.6 In accordance with New York Labor Law § 220 (3) (a), the Contractor and every sub-contractor agrees to notify all laborers, workers or mechanics in their employ in writing of the prevailing rate of wage for their particular job classification. Such notification shall be given to every laborer, worker or mechanic on their first pay stub and with every pay stub thereafter. At the beginning of performance of every public works contract, and with the first paycheck after July first of each year, the Contractor and every sub-contractor shall notify all laborers, workers, and mechanics in their employ in writing, in accordance with such form as is prescribed by the department, of the telephone number and address for the department. The notice shall also

inform each laborer, worker, or mechanic of his or her right to contact the department or some other representative if, at any time while working for the public works contractor or sub-contractor, he or she does not receive the proper prevailing rate of wages or supplements for his or her particular job classification that he or she is entitled to receive under the contract.

ARTICLE 24 - STATUTORY REQUIREMENTS FOR RESTRICTIONS ON CONTACTS DURING THE PROCUREMENT PROCESS AND DISCLOSURE OF CONTACTS AND RESPONSIBILITY OF OFFERERS MISCELLANEOUS PROVISIONS

24.1 New York State Finance Law §139-k requires that every procurement contract award subject to the provisions of State Finance Law §139-k or §139-j shall contain a certification by the offerer that all information provided to the procuring governmental agency with respect to State Finance Law §139-k is complete, true and accurate. The Contractor shall provide that certification in his contract or agreement.

24.2 New York State Finance Law

24.2.1 New York State Finance Law § 139-k(2) obligates a Governmental Entity to obtain specific information regarding prior non-responsibility determinations. This information must be collected in addition to the information that is separately obtained pursuant to State Finance Law § 163 (9). In accordance with State Finance Law § 139-k, an offerer must be asked to disclose whether there has been a finding of non-responsibility made within the previous four (4) years by any Governmental Entity due to: (a) a violation of State Finance Law § 139-j or (b) the intentional provision of false or incomplete information to a Governmental Entity.

24.2.2 As part of its responsibility determination, State Finance Law § 139-k(3) mandates consideration of whether an offerer fails to timely disclose or complete information regarding the above non-responsibility determination. In accordance with law, no procurement contract shall be awarded to any offerer that fails to timely disclose accurate or complete information under this section, unless a finding is made that the award of the Procurement Contract to the Offerer is necessary to protect public property or public health safety, and that the Offerer is the only source capable of supplying the required Article of Procurement within the necessary timeframe. The required forms to be completed by the offerer must be submitted to the Governmental Entity conducting the government procurement. The Governmental Entity will have included the disclosure request in its solicitation of proposals or bid documents or specifications of contract documents, as applicable, for procurement contracts.

ARTICLE 25 – MISCELLANEOUS PROVISIONS

25.1 Appendix A, standard clauses for all N.Y. State contracts, is attached hereto and is made a part of this agreement as if set forth herein.

25.2 If, in carrying out this Work, a harmful dust hazard is created for which appliances or methods for the elimination of harmful dust have been approved by the Board of Standards and Appeals, then the Contractor shall install, maintain and effectively operate such appliances and methods during the life of this Contract; and in case of Contractor's failure to comply, as provided by Section 222-a of the Labor Law, the Contract shall be void.

25.3 RETAINED PERCENTAGES: The Contractor agrees that, if the Contract Documents for this Contract includes Performance and Payment Bonds, the State shall retain five percent of the amount of each progress payment in accordance with Section 139-f of the State Finance Law. The Contractor further agrees that, if the Contract Documents for this Contract do not include Performance and Payment Bonds, the State shall retain ten percent of the amount of each progress payment in accordance with Section 139-f of the State Finance Law.

25.4 DOMESTIC STEEL: The Contractor agrees, that if the value of this contract exceeds $100,000 all structural steel, reinforcing steel and other major steel items to be incorporated in the Work of this Contract shall be produced and made in whole or substantial part in the United States, its territories or possessions.

25.5 COMMENCEMENT OF ACTIONS: The time, as prescribed by law, within which an action on the contract against the Contractor must be commenced shall be computed from the completion of physical work. The Contractor may notify the State in writing that the physical work of the contract has been completed by specifying a completion date, which date shall be no more than thirty days previous to the date of such notice. The completion date set forth in such notice shall be deemed the date of completion of the physical work unless the State, within thirty days of receipt of such notice, notifies the Contractor in writing of its disagreement. Any notice pursuant to this paragraph shall be sent by the Contractor by Certified Mail and addressed to:

Division of Contract Administration
Contracting Officer
35th Floor, Corning Tower
Albany, New York 12242

25.5.1 In the event that the Contractor fails to send the notice provided for herein or the State disagrees in the manner provided for herein, the date of completion of the physical work shall be determined in any other manner provided by law.

25.6 WORKER'S COMPENSATION LAW: In accordance with Worker's Compensation Law (WCL) §141-b (Suspension and Debarment), any person subject to a final assessment of civil fines or penalties or a stop-work order, or that has been convicted of a misdemeanor for a violation of WCL §§ 26 (Enforcement of Payment in Default), 52 (Effect of Failure to Secure Compensation) or 131 (Payroll Records), and any substantially-owned affiliated entity of such person, shall be ineligible to submit a bid on or be awarded any such public work contract or subcontract with the State, any municipal corporation or public body for a period of one (1) year from the final determination or conviction. Any person convicted of a felony under Article 8 (Administration) of the WCL, or a misdemeanor under WCL §§125 (Job Description Prohibited Based on Prior Receipt of Benefits) and 125-a (Civil Enforcement) shall be ineligible to submit a bid or be awarded any public work contract or subcontract with the State, any municipal corporation or public body for a period of five (5) years from such conviction.

25.7 ENVIRONMENTAL CONSERVATION LAWS: The Contractor certifies and warrants that all heavy duty vehicles, as defined in New York State Environmental Law (ECL) section 19-0323, to be used under this Contract, will comply with the specifications and provisions of ECL section 19-0323 and any regulations promulgated pursuant thereto, which requires the use of BART and ULSD, unless specifically waived by NYSDEC. Qualification for a waiver under this law will be the responsibility of the Contractor.

25.8 REPORTING OF ILLEGAL ACTIVITY: During the term of the contract, the Contractor agrees to report any observed or suspected illegal activity of its employees, agents or other third parties, to the Contracting Officer at 518-474-0201, the Group Director, OGS Legal Services, the State Inspector General or other law enforcement agency. Failure to report criminal conduct associated with a contract awarded by the Office of General Services, will be considered a material breach of the contract and may provide grounds for disqualification of the subject Contractor or Subcontractor for award of future contracts. The Contractor will include the provisions of this section in every subcontract, in such a manner that the provisions will be binding upon each Subcontractor as to work performed in connection with the State contract.

APPENDIX A

STANDARD CLAUSES FOR NEW YORK STATE CONTRACTS

**PLEASE RETAIN THIS DOCUMENT
FOR FUTURE REFERENCE.**

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STANDARD CLAUSES FOR NYS CONTRACTS

The parties to the attached contract, license, lease, amendment or other agreement of any kind (hereinafter, "the contract" or "this contract") agree to be bound by the following clauses which are hereby made a part of the contract (the word "Contractor" herein refers to any party other than the State, whether a contractor, licenser, licensee, lessor, lessee or any other party):

1. EXECUTORY CLAUSE. In accordance with Section 41 of the State Finance Law, the State shall have no liability under this contract to the Contractor or to anyone else beyond funds appropriated and available for this contract.

2. NON-ASSIGNMENT CLAUSE. In accordance with Section 138 of the State Finance Law, this contract may not be assigned by the Contractor or its right, title or interest therein assigned, transferred, conveyed, sublet or otherwise disposed of without the State's previous written consent, and attempts to do so are null and void. Notwithstanding the foregoing, such prior written consent of an assignment of a contract let pursuant to Article XI of the State Finance Law may be waived at the discretion of the contracting agency and with the concurrence of the State Comptroller where the original contract was subject to the State Comptroller's approval, where the assignment is due to a reorganization, merger or consolidation of the Contractor's business entity or enterprise. The State retains its right to approve an assignment and to require that any Contractor demonstrate its responsibility to do business with the State. The Contractor may, however, assign its right to receive payments without the State's prior written consent unless this contract concerns Certificates of Participation pursuant to Article 5-A of the State Finance Law.

3. COMPTROLLER'S APPROVAL. In accordance with Section 112 of the State Finance Law, if this contract exceeds $50,000 (or $75,000 for State University of New York or City University of New York contracts for goods, services, construction and printing, and $150,000 for State University Health Care Facilities) or if this is an amendment for any amount to a contract which, as so amended, exceeds said statutory amount, or if, by this contract, the State agrees to give something other than money when the value or reasonably estimated value of such consideration exceeds $25,000, it shall not be valid, effective or binding upon the State until it has been approved by the State Comptroller and filed in his office. Comptroller's approval of contracts let by the Office of General Services, either for itself or its customer agencies by the Office of General Services Business Services Center, is required when such contracts exceed $85,000. Comptroller's approval of contracts established as centralized contracts through the Office of General Services is required when such contracts exceed $125,000, and when a purchase order or other procurement transaction issued under such centralized contract exceeds $200,000.

4. WORKERS' COMPENSATION BENEFITS. In accordance with Section 142 of the State Finance Law, this contract shall be void and of no force and effect unless the Contractor shall provide and maintain coverage during the life of this contract for the benefit of such employees as are required to be covered by the provisions of the Workers' Compensation Law.

5. NON-DISCRIMINATION REQUIREMENTS. To the extent required by Article 15 of the Executive Law (also known as the Human Rights Law) and all other State and Federal statutory and constitutional non-discrimination provisions, the Contractor will not discriminate against any employee or applicant for employment, nor subject any individual to harassment, because of age, race, creed, color, national origin, citizenship or immigration status, sexual orientation, gender identity or expression, military status, sex, disability, predisposing genetic characteristics, familial status, marital status, or domestic violence victim status or because the individual has opposed any practices forbidden under the Human Rights Law or has filed a complaint, testified, or assisted in any proceeding under the Human Rights Law. Furthermore, in accordance with Section 220-e of the Labor Law, if this is a contract for the construction, alteration or repair of any public building or public work or for the manufacture, sale or distribution of materials, equipment or supplies, and to the extent that this contract shall be performed within the State of New York, Contractor agrees that neither it nor its subcontractors shall, by reason of race, creed, color, disability, sex, or national origin: (a) discriminate in hiring against any New York State citizen who is qualified and available to perform the work; or (b) discriminate against or intimidate any employee hired for the performance of work under this contract. If this is a building service contract as defined in Section 230 of the Labor Law, then, in accordance with Section 239 thereof, Contractor agrees that neither it nor its subcontractors shall by reason of race, creed, color, national origin, age, sex or disability: (a) discriminate in hiring against any New York State citizen who is qualified and available to perform the work; or (b) discriminate against or intimidate any employee hired for the performance of work under this contract. Contractor is subject to fines of $50.00 per person per day for any violation of Section 220-e or Section 239 as well as possible termination of this contract and forfeiture of all moneys due hereunder for a second or subsequent violation.

6. WAGE AND HOURS PROVISIONS. If this is a public work contract covered by Article 8 of the Labor Law or a building service contract covered by Article 9 thereof, neither Contractor's employees nor the

employees of its subcontractors may be required or permitted to work more than the number of hours or days stated in said statutes, except as otherwise provided in the Labor Law and as set forth in prevailing wage and supplement schedules issued by the State Labor Department. Furthermore, Contractor and its subcontractors must pay at least the prevailing wage rate and pay or provide the prevailing supplements, including the premium rates for overtime pay, as determined by the State Labor Department in accordance with the Labor Law. Additionally, effective April 28, 2008, if this is a public work contract covered by Article 8 of the Labor Law, the Contractor understands and agrees that the filing of payrolls in a manner consistent with Subdivision 3-a of Section 220 of the Labor Law shall be a condition precedent to payment by the State of any State approved sums due and owing for work done upon the project.

7. NON-COLLUSIVE BIDDING CERTIFICATION. In accordance with Section 139-d of the State Finance Law, if this contract was awarded based upon the submission of bids, Contractor affirms, under penalty of perjury, that its bid was arrived at independently and without collusion aimed at restricting competition. Contractor further affirms that, at the time Contractor submitted its bid, an authorized and responsible person executed and delivered to the State a non-collusive bidding certification on Contractor's behalf.

8. INTERNATIONAL BOYCOTT PROHIBITION. In accordance with Section 220-f of the Labor Law and Section 139-h of the State Finance Law, if this contract exceeds $5,000, the Contractor agrees, as a material condition of the contract, that neither the Contractor nor any substantially owned or affiliated person, firm, partnership or corporation has participated, is participating, or shall participate in an international boycott in violation of the federal Export Administration Act of 1979 (50 USC App. Sections 2401 et seq.) or regulations thereunder. If such Contractor, or any of the aforesaid affiliates of Contractor, is convicted or is otherwise found to have violated said laws or regulations upon the final determination of the United States Commerce Department or any other appropriate agency of the United States subsequent to the contract's execution, such contract, amendment or modification thereto shall be rendered forfeit and void. The Contractor shall so notify the State Comptroller within five (5) business days of such conviction, determination or disposition of appeal (2 NYCRR § 105.4).

9. SET-OFF RIGHTS. The State shall have all of its common law, equitable and statutory rights of set-off. These rights shall include, but not be limited to, the State's option to withhold for the purposes of set-off any moneys due to the Contractor under this contract up to any amounts due and owing to the State with regard to this contract, any other contract with any State department or agency, including any contract for a term commencing prior to the term of this contract, plus any amounts due and owing to the State for any other reason including, without limitation, tax delinquencies, fee delinquencies or monetary penalties relative thereto. The State shall exercise its set-off rights in accordance with normal State practices including, in cases of set-off pursuant to an audit, the finalization of such audit by the State agency, its representatives, or the State Comptroller.

10. RECORDS. The Contractor shall establish and maintain complete and accurate books, records, documents, accounts and other evidence directly pertinent to performance under this contract (hereinafter, collectively, the "Records"). The Records must be kept for the balance of the calendar year in which they were made and for six (6) additional years thereafter. The State Comptroller, the Attorney General and any other person or entity authorized to conduct an examination, as well as the agency or agencies involved in this contract, shall have access to the Records during normal business hours at an office of the Contractor within the State of New York or, if no such office is available, at a mutually agreeable and reasonable venue within the State, for the term specified above for the purposes of inspection, auditing and copying. The State shall take reasonable steps to protect from public disclosure any of the Records which are exempt from disclosure under Section 87 of the Public Officers Law (the "Statute") provided that: (i) the Contractor shall timely inform an appropriate State official, in writing, that said records should not be disclosed; and (ii) said records shall be sufficiently identified; and (iii) designation of said records as exempt under the Statute is reasonable. Nothing contained herein shall diminish, or in any way adversely affect, the State's right to discovery in any pending or future litigation.

11. IDENTIFYING INFORMATION AND PRIVACY NOTIFICATION. (a) Identification Number(s). Every invoice or New York State Claim for Payment submitted to a New York State agency by a payee, for payment for the sale of goods or services or for transactions (e.g., leases, easements, licenses, etc.) related to real or personal property must include the payee's identification number. The number is any or all of the following: (i) the payee's Federal employer identification number, (ii) the payee's Federal social security number, and/or (iii) the payee's Vendor Identification Number assigned by the Statewide Financial System. Failure to include such number or numbers may delay payment. Where the payee does not have such number or numbers, the payee, on its invoice or Claim for Payment, must give the reason or reasons why the payee does not have such number or numbers.

(b) Privacy Notification. (1) The authority to request the above personal information from a seller of goods or services or a lessor of real or personal property, and the authority to maintain such information, is found in Section 5 of the State Tax Law. Disclosure of this information by the seller or lessor to the State is mandatory. The principal purpose for which the information is collected is to enable the State to identify individuals, businesses and others who have been delinquent in filing tax returns or may have understated their tax liabilities and to generally identify persons affected by the taxes administered by the Commissioner of Taxation and Finance. The information will be used for tax administration purposes and for any other purpose authorized by law. (2) The personal information is requested by the purchasing unit of the agency contracting to purchase the goods or services or lease the real or personal property covered by this contract or lease. The information is maintained in the Statewide Financial System by the Vendor Management Unit within the Bureau of State Expenditures, Office of the State Comptroller, 110 State Street, Albany, New York 12236.

12. EQUAL EMPLOYMENT OPPORTUNITIES FOR MINORITIES AND WOMEN. In accordance with Section 312 of the Executive Law and 5 NYCRR Part 143, if this contract is: (i) a written agreement or purchase order instrument, providing for a total expenditure in excess of $25,000.00, whereby a contracting agency is committed to expend or does expend funds in return for labor, services, supplies, equipment, materials or any combination of the foregoing, to be performed for, or rendered or furnished to the contracting agency; or (ii) a written agreement in excess of $100,000.00 whereby a contracting agency is committed to expend or does expend funds for the acquisition, construction, demolition, replacement, major repair or renovation of real property and improvements thereon; or (iii) a written agreement in excess of $100,000.00 whereby the owner of a State assisted housing project is committed to expend or does expend funds for the acquisition, construction, demolition, replacement, major repair or renovation of real property and improvements thereon for such project, then the following shall apply and by signing this agreement the Contractor certifies and affirms that it is Contractor's equal employment opportunity policy that:

(a) The Contractor will not discriminate against employees or applicants for employment because of race, creed, color, national origin, sex, age, disability or marital status, shall make and document its conscientious and active efforts to employ and utilize minority group members and women in its work force on State contracts and will undertake or continue existing programs of affirmative action to ensure that minority group members and women are afforded equal employment opportunities without discrimination. Affirmative action shall mean recruitment, employment, job assignment, promotion, upgradings, demotion, transfer, layoff, or termination and rates of pay or other forms of compensation;

(b) at the request of the contracting agency, the Contractor shall request each employment agency, labor union, or authorized representative of workers with which it has a collective bargaining or other agreement or understanding, to furnish a written statement that such employment agency, labor union or representative will not discriminate on the basis of race, creed, color, national origin, sex, age, disability or marital status and that such union or representative will affirmatively cooperate in the implementation of the Contractor's obligations herein; and

(c) the Contractor shall state, in all solicitations or advertisements for employees, that, in the performance of the State contract, all qualified applicants will be afforded equal employment opportunities without discrimination because of race, creed, color, national origin, sex, age, disability or marital status.

Contractor will include the provisions of "(a), (b) and (c)" above, in every subcontract over $25,000.00 for the construction, demolition, replacement, major repair, renovation, planning or design of real property and improvements thereon (the "Work") except where the Work is for the beneficial use of the Contractor. Section 312 does not apply to: (i) work, goods or services unrelated to this contract; or (ii) employment outside New York State. The State shall consider compliance by a contractor or subcontractor with the requirements of any federal law concerning equal employment opportunity which effectuates the purpose of this clause. The contracting agency shall determine whether the imposition of the requirements of the provisions hereof duplicate or conflict with any such federal law and if such duplication or conflict exists, the contracting agency shall waive the applicability of Section 312 to the extent of such duplication or conflict. Contractor will comply with all duly promulgated and lawful rules and regulations of the Department of Economic Development's Division of Minority and Women's Business Development pertaining hereto.

13. CONFLICTING TERMS. In the event of a conflict between the terms of the contract (including any and all attachments thereto and amendments thereof) and the terms of this Appendix A, the terms of this Appendix A shall control.

14. GOVERNING LAW. This contract shall be governed by the laws of the State of New York except where the Federal supremacy clause requires otherwise.

15. LATE PAYMENT. Timeliness of payment and any interest to be paid to Contractor for late payment shall be governed by Article 11-A of the State Finance Law to the extent required by law.

16. NO ARBITRATION. Disputes involving this contract, including the breach or alleged breach thereof, may not be submitted to binding arbitration (except where statutorily authorized), but must, instead, be heard in a court of competent jurisdiction of the State of New York.

17. SERVICE OF PROCESS. In addition to the methods of service allowed by the State Civil Practice Law & Rules ("CPLR"), Contractor hereby consents to service of process upon it by registered or certified mail, return receipt requested. Service hereunder shall be complete upon Contractor's actual receipt of process or upon the State's receipt of the return thereof by the United States Postal Service as refused or undeliverable. Contractor must promptly notify the State, in writing, of each and every change of address to which service of process can be made. Service by the State to the last known address shall be sufficient. Contractor will have thirty (30) calendar days after service hereunder is complete in which to respond.

18. PROHIBITION ON PURCHASE OF TROPICAL HARDWOODS. The Contractor certifies and warrants that all wood products to be used under this contract award will be in accordance with, but not limited to, the specifications and provisions of Section 165 of the State Finance Law, (Use of Tropical Hardwoods) which prohibits purchase and use of tropical hardwoods, unless specifically exempted, by the State or any governmental agency or political subdivision or public benefit corporation. Qualification for an exemption under this law will be the responsibility of the contractor to establish to meet with the approval of the State.

In addition, when any portion of this contract involving the use of woods, whether supply or installation, is to be performed by any subcontractor, the prime Contractor will indicate and certify in the submitted bid proposal that the subcontractor has been informed and is in compliance with specifications and provisions regarding use of tropical hardwoods as detailed in § 165 State Finance Law. Any such use must meet with the approval of the State; otherwise, the bid may not be considered responsive. Under bidder certifications, proof of qualification for exemption will be the responsibility of the Contractor to meet with the approval of the State.

19. MACBRIDE FAIR EMPLOYMENT PRINCIPLES. In accordance with the MacBride Fair Employment Principles (Chapter 807 of the Laws of 1992), the Contractor hereby stipulates that the Contractor either (a) has no business operations in Northern Ireland, or (b) shall take lawful steps in good faith to conduct any business operations in Northern Ireland in accordance with the MacBride Fair Employment Principles (as described in Section 165 of the New York State Finance Law), and shall permit independent monitoring of compliance with such principles.

20. OMNIBUS PROCUREMENT ACT OF 1992. It is the policy of New York State to maximize opportunities for the participation of New York State business enterprises, including minority- and women-owned business enterprises as bidders, subcontractors and suppliers on its procurement contracts.

Information on the availability of New York State subcontractors and suppliers is available from:

NYS Department of Economic Development
Division for Small Business and Technology Development
625 Broadway
Albany, New York 12245
Telephone: 518-292-5100

A directory of certified minority- and women-owned business enterprises is available from:

NYS Department of Economic Development
Division of Minority and Women's Business Development
633 Third Avenue 33rd Floor
New York, NY 10017
646-846-7364
email: mwbebusinessdev@esd.ny.gov
https://ny.newnycontracts.com/FrontEnd/searchcertifieddirectory.asp

The Omnibus Procurement Act of 1992 (Chapter 844 of the Laws of 1992, codified in State Finance Law § 139-i and Public Authorities Law § 2879(3)(n)–(p)) requires that by signing this bid proposal or contract, as applicable, Contractors certify that whenever the total bid amount is greater than $1 million:

(a) The Contractor has made reasonable efforts to encourage the participation of New York State Business Enterprises as suppliers and subcontractors, including certified minority- and women-owned business enterprises, on this project, and has retained the documentation of these efforts to be provided upon request to the State;

(b) The Contractor has complied with the Federal Equal Opportunity Act of 1972 (P.L. 92-261), as amended;

(c) The Contractor agrees to make reasonable efforts to provide notification to New York State residents of employment opportunities on this project through listing any such positions with the Job Service Division of the New York State Department of Labor, or providing such notification in such manner as is consistent with existing collective bargaining contracts or agreements. The Contractor agrees to document these efforts and to provide said documentation to the State upon request; and

(d) The Contractor acknowledges notice that the State may seek to obtain offset credits from foreign countries as a result of this contract and agrees to cooperate with the State in these efforts.

21. RECIPROCITY AND SANCTIONS PROVISIONS. Bidders are hereby notified that if their principal place of business is located in a country, nation, province, state or political subdivision that penalizes New York State vendors, and if the goods or services they offer will be substantially produced or performed outside New York State, the Omnibus Procurement Act 1994 and 2000 amendments (Chapter 684 and Chapter 383, respectively, codified in State Finance Law § 165(6) and Public Authorities Law § 2879(5)) require that they be denied contracts which they would otherwise obtain. NOTE: As of May 2023, the list of discriminatory jurisdictions subject to this provision includes the states of South Carolina, Alaska, West Virginia, Wyoming, Louisiana and Hawaii.

22. COMPLIANCE WITH BREACH NOTIFICATION AND DATA SECURITY LAWS. Contractor shall comply with the provisions of the New York State Information Security Breach and Notification Act (General Business Law §§ 899-aa and 899-bb and State Technology Law § 208).

23. COMPLIANCE WITH CONSULTANT DISCLOSURE LAW. If this is a contract for consulting services, defined for purposes of this requirement to include analysis, evaluation, research, training, data processing, computer programming, engineering, environmental, health, and mental health services, accounting, auditing, paralegal, legal or similar services, then, in accordance with Section 163 (4)(g) of the State Finance Law (as amended by Chapter 10 of the Laws of 2006), the Contractor shall timely, accurately and properly comply with the requirement to submit an annual employment report for the contract to the agency that awarded the contract, the Department of Civil Service and the State Comptroller.

24. PROCUREMENT LOBBYING. To the extent this agreement is a "procurement contract" as defined by State Finance Law §§ 139-j and 139-k, by signing this agreement the contractor certifies and affirms that all disclosures made in accordance with State Finance Law §§ 139-j and 139-k are complete, true and accurate. In the event such certification is found to be intentionally false or intentionally incomplete, the State may terminate the agreement by providing written notification to the Contractor in accordance with the terms of the agreement.

25. CERTIFICATION OF REGISTRATION TO COLLECT SALES AND COMPENSATING USE TAX BY CERTAIN STATE CONTRACTORS, AFFILIATES AND SUBCONTRACTORS.
To the extent this agreement is a contract as defined by Tax Law § 5-a, if the contractor fails to make the certification required by Tax Law § 5-a or if during the term of the contract, the Department of Taxation and Finance or the covered agency, as defined by Tax Law § 5-a, discovers that the certification, made under penalty of perjury, is false, then such failure to file or false certification shall be a material breach of this contract and this contract may be terminated, by providing written notification to the Contractor in accordance with the terms of the agreement, if the covered agency determines that such action is in the best interest of the State.

26. IRAN DIVESTMENT ACT. By entering into this Agreement, Contractor certifies in accordance with State Finance Law § 165-a that it is not on the "Entities Determined to be Non-Responsive Bidders/Offerers pursuant to the New York State Iran Divestment Act of 2012" ("Prohibited Entities List") posted at: https://ogs.ny.gov/iran-divestment-act-2012

Contractor further certifies that it will not utilize on this Contract any subcontractor that is identified on the Prohibited Entities List. Contractor agrees that should it seek to renew or extend this Contract, it must provide the same certification at the time the Contract is renewed or extended. Contractor also agrees that any proposed Assignee of this Contract will be required to certify that it is not on the Prohibited Entities List before the contract assignment will be approved by the State.

During the term of the Contract, should the state agency receive information that a person (as defined in State Finance Law § 165-a) is in violation of the above-referenced certifications, the state agency will review such information and offer the person an opportunity to respond. If the person fails to demonstrate that it has ceased its engagement in the investment activity which is in violation of the Act within 90 days after the determination of such violation, then the state agency shall take such action as may be appropriate and provided for by law, rule, or contract, including, but not limited to, imposing sanctions, seeking compliance, recovering damages, or declaring the Contractor in default.

The state agency reserves the right to reject any bid, request for assignment, renewal or extension for an entity that appears on the Prohibited Entities List prior to the award, assignment, renewal or extension of a contract, and to pursue a responsibility review with respect to any entity that is awarded a contract and appears on the Prohibited Entities list after contract award.

27. ADMISSIBILITY OF REPRODUCTION OF CONTRACT. Notwithstanding the best evidence rule or any other legal principle or rule of evidence to the contrary, the Contractor acknowledges and agrees that it waives any and all objections to the admissibility into evidence at any court proceeding or to the use at any examination before trial of an electronic reproduction of this contract, in the form approved by the State Comptroller, if such approval was required, regardless of whether the original of said contract is in existence.

1. If the Contractor performs the Contract, the Surety and the Contractor shall have no obligation under the Performance Bond.

2. The Surety's obligation under this Bond shall arise after:

2.1 The State has notified the Contractor and the Surety in writing that the State is considering declaring a Contractor in default, or

2.2 The State has declared a Contractor in default and formally terminated the Contractor's right to complete the Contract, and

2.3 The State has agreed to pay the Balance of the Contract Price to the Surety or to a Contractor selected to complete the Contract in accordance with the terms of the Contract with the State.

3. The Surety shall promptly and at its own expense, take the following actions:

3.1 Undertake to perform and complete the Contract, through its agent or retained contractor; according to the following schedule:

Day 1-10 Immediately begins it investigation Advises OGS of its Representatives.

Day 10-25 Visits Site with OGS representatives to review the contract documents and completed work; and determines extent of acceptable Work.

Day 25-30 Submits proposed completion contractor, completion plan, and CPM as required, for approval by the Office of General Services.

Day 30-44 As completing contractor, the surety or its representative, presents its list of subcontractors to OGS for approval. Additionally an Insurance Certificate naming the Surety and completion Contractor as named insured must be submitted to the Contracting Officer prior to the beginning any completion of the Work. The completion plan and schedule is returned to Surety.

Day 45 Surety begins the Completion of the Work.

4. If the Surety does not proceed with reasonable promptness, the Surety shall be deemed to be in default on the Bond, and the State shall be entitled to enforce any remedy available pursuant to the terms of the contract.

5. After the State has terminated the Contractor's right to complete the Contract, and if the Surety elects to act then the responsibilities of the Surety to the State shall not be greater than those of the Contractor under the Contract, and the responsibilities of the State to the Surety shall not be greater than those provided under the Contract. To the limit of the amount of this Bond, the Surety is obligated to correct defective work and complete the work of the Contract in a timely manner.

6. The penal sum of the Performance Bond furnished by the contractor to the State, approved and filed with the Office of the State Comptroller, in no way shall be impaired or affected by any other bond that may relate to the contract in question.

END OF DOCUMENT

DOCUMENT 007305

SUPPLEMENTARY CONDITIONS - LIQUIDATED DAMAGES

This supplement modifies the General Conditions. Where any part of the General Conditions is modified by this supplement, the unaltered provisions of that part shall remain in effect.

ARTICLE 2 - DEFINITIONS

2.11 The term "liquidated damages" means the amount of money to be assessed against the Contractor for delay in completion of the Work.

ARTICLE 13 - TIME OF COMPLETION AND TERMINATION FOR CAUSE

13.3 Liquidated Damages: Should Contractor fail to substantially complete the Work within the time frame set forth in the contract, or as described in a subsequent Order(s) on Contract, the Group Director may assess Liquidated Damages for such failure in the amount of $1,000.00 per day until such time as the Group Director determines that the Work is substantially complete as defined in Section 2.21 herein. Should Contractor fail to achieve physical completion of the work within the time frame set forth in the contract, the Group Director may assess Liquidated Damages for such failure in the amount of $500.00 per day until such time as the Group Director determines that the Work is physically complete as defined in Section 2.12 herein. Notwithstanding the provisions of Article 21 herein, Contractor agrees that the Group Director may withhold the sum of the Liquidated Damages from payments to be made to Contractor as compensation to the State for administrative fees and public inconvenience.

END OF DOCUMENT

DOCUMENT 007307

SUPPLEMENTARY CONDITIONS – MWBE-EEO

CONTRACTOR REQUIREMENTS AND PROCEDURES FOR PARTICIPATION BY NEW YORK STATE CERTIFIED MINORITY- AND WOMEN-OWNED BUSINESS ENTERPRISES AND EQUAL EMPLOYMENT OPPORTUNITIES FOR MINORITY GROUP MEMBERS AND WOMEN

This supplement modifies the General Conditions. Where any part of the General Conditions is modified by this supplement, the unaltered provisions of that part shall remain in effect.

ARTICLE 16 - REQUIREMENTS FOR UTILIZATION OF MINORITY- AND WOMEN-OWNED BUSINESS ENTERPRISES (MWBEs)

Add the following:

16.6 Participation by Minority Group Members and Women with Respect to State Contracts: Requirements and Procedures: General Provisions:

16.6.1 OGS is required to implement the provisions of New York State Executive Law Article 15-A and 5 NYCRR Parts 140-145 ("MWBE Regulations") for all State contracts as defined therein, with a value (1) in excess of $25,000 for labor, services, equipment, materials, or any combination of the foregoing or (2) in excess of $100,000 for real property renovations and construction (the "Work").

16.6.2 The Contractor agrees, in addition to any other nondiscrimination provision of the Contract and at no additional cost to OGS, to fully comply and cooperate with OGS in the implementation of New York State Executive Law Article 15-A and the regulations promulgated thereunder. These requirements include equal employment opportunities for minority group members and women ("EEO") and contracting opportunities for MWBEs. Contractor's demonstration of "good faith efforts" pursuant to 5 NYCRR §142.8 shall be a part of these requirements. These provisions shall be deemed supplementary to, and not in lieu of, the nondiscrimination provisions required by New York State Executive Law Article 15 (the "Human Rights Law") or other applicable federal, State or local laws.

16.6.3 Failure to comply with all of the requirements herein may result in a finding of non-responsiveness, a finding of non-responsibility, a breach of contract, leading to the withholding of funds, liquidated damages pursuant to Section 27.9 herein, and/or enforcement proceedings as allowed by the Contract and applicable law.

16.7 Contract Goals:

16.7.1 OGS hereby establishes an overall goal of 30% for MWBE participation, 15% for Minority-Owned Business Enterprises ("MBE") participation and 15% for Women-Owned Business Enterprises ("WBE") participation (based on the current availability of MBEs and WBEs). The total contract goal can be obtained by utilizing any combination of MBE and /or WBE participation for subcontracting and supplies acquired under this Contract.

16.7.2 For purposes of providing meaningful participation by MWBEs on the Contract and achieving the Contract Goals established in Section 16.7.1 hereof, Contractor should reference the directory of NYS Certified MBWEs found at the following internet address:

https://ny.newnycontracts.com/FrontEnd/VendorSearchPublic.asp?TN=ny&XID=2528.

The MWBE Regulations are located at 5 NYCRR §§ 140 – 145. Additionally, Contractor is encouraged to contact the Division of Minority and Women's Business Development (518) 292-5250; (212) 803-2414; or (716) 846-8200) to discuss additional methods of maximizing participation by MWBEs on the Contract.

16.7.3 Pursuant to 5 NYCRR §142.8, Contractor must document "good faith efforts" to provide meaningful participation by MWBEs as subcontractors or suppliers in the performance of the Contract.

16.7.4 In accordance with Executive Law Section 316-a and 5 NYCRR §142.13, the Contractor acknowledges that if it is found to have willfully and intentionally failed to comply with the MWBE participation goals set forth in the Contract, such a finding constitutes a breach of contract and the Contractor shall be liable to OGS for liquidated or other appropriate damages, as set forth herein.

16.7.5 In accordance with 5 NYCRR § 142.8, Contractors must document their good faith efforts toward utilizing MWBEs on the Contract. Evidence of required good faith efforts shall include, but not be limited to, the following:

a. A list of the general circulation, trade, and MWBE-oriented publications and dates of publications in which the Contractor solicited the participation of certified MWBEs as subcontractors/suppliers, copies of such solicitations, and any responses thereto.

b. A list of certified MWBEs appearing in the Empire State Development ("ESD") MWBE directory that were solicited for this Contract. Provide proof of dates or copies of the solicitations and copies of the responses made by the certified MWBEs. Describe specific reasons that responding certified MWBEs were not selected.

c. Descriptions of the Contract documents/plans/specifications made available to certified MWBEs by the Contractor when soliciting their participation and steps taken to structure the scope of work for the purpose of subcontracting with, or obtaining supplies from, certified MWBEs.

d. A description of the negotiations between the Contractor and certified MWBEs for the purposes of complying with the MWBE goals of this Contract.

e. Dates of any pre-bid, pre-award, or other meetings attended by Contractor, if any, scheduled by OGS with certified MWBEs whom OGS determined were capable of fulfilling the MWBE goals set in the Contract.

f. Other information deemed relevant to the request.

16.7.6 The goal for participation in the conduct of the Work is expressed as a percentage equal to the dollar value of the Work performed divided by the Contract Sum. Where the cost to the Contractor of a single item of equipment exceeds twenty-five percent (25%) of the total contract price and where the Contractor has shown good faith efforts to obtain such equipment from MWBE manufacturers and suppliers, and was unsuccessful in obtaining the equipment from an MWBE, the cost of such equipment shall be deducted from the contract sum prior to computing the MWBE participation.

16.7.7 The MWBE utilization credit for Work performed by MWBEs will be determined as follows:

a. Where an MWBE is not the Contractor - MWBE utilization credit will vary depending on how the MWBE performs Work under the Contract, as follows:

i. Where the MWBE performs Work under the Contract as a subcontractor, MBE or WBE utilization credit will be 100% of the dollar value of the Work performed by the MBE or WBE.

ii. Where the MWBE performs Work under the Contract as a manufacturer, MBE or WBE utilization credit will be 100% of the dollar value of the Work performed by the MBE or WBE.

iii. Where the MWBE assists in the performance of the Work under the Contract as a supplier, MBE or WBE utilization credit will be 60% of the dollar value of the Work performed by the MBE or WBE.

iv. Where the MWBE assists in the performance of the Work under the Contract as a broker, MBE or WBE utilization credit will be equal to the percentage of the commission, or the mark-up percentage, of the items brokered, applied to the dollar value of the Work performed by the MBE or WBE.

b. Where the Contractor is a joint venture including one or more MWBEs as joint venturers, MBE or WBE utilization credit will be the Contract Sum multiplied by the percentage of the joint venture's profits (or losses) that are to accrue to the MWBE joint venturer(s) under the joint venture agreement.

c. Where any MWBE is the Contractor or where the Contractor is a joint venture consisting entirely of MWBEs, and the Contractor can document good faith efforts to subcontract to MWBE subcontractors and/or suppliers - the Contract Sum.

Add the following articles:

ARTICLE 26 – EQUAL EMPLOYMENT OPPORTUNITY (EEO)

26.1 The provisions of Article 15-A of the Executive Law and the rules and regulations promulgated thereunder pertaining to equal employment opportunities for minority group members and women shall apply to all Contractors, and any subcontractors, awarded a subcontract over $25,000 for labor, services, including legal, financial and other professional services, travel, supplies, equipment, materials, or any combination of the foregoing, to be performed, or rendered or furnished to, the contracting State agency ("the Work") except where the Work is for the beneficial use of the Contractor.

26.1.1 Contractor and Subcontractors shall undertake or continue existing EEO programs to ensure that minority group members and women are afforded equal employment opportunities without discrimination because of race, creed, color, national origin, sex, age, disability, or marital status. For these purposes, EEO shall apply in the areas of recruitment, employment, job assignment, promotion, upgrading, demotion, transfer, layoff or termination, and rates of pay or other forms of compensation. This requirement does not apply to: (i) the performance of work or the provision of services or any other activity that is unrelated, separate, or distinct from the Contract; or (ii) employment outside New York State.

26.1.2 By entering into this Contract, Contractor certifies that the text set forth in clause 12 of Appendix A, attached hereto and made a part hereof, is Contractor's equal employment opportunity policy. In addition, Contractor agrees to comply with the Non-Discrimination Requirements set forth in clause 5 of Appendix A.

The Contractor will include the provisions of Clause 26.1.2 and Clause 26.3 of this Article, which provides for relevant provisions of the Human Rights Law, in every subcontract in such a manner that the requirements of the subdivisions will be binding upon each subcontractor as to work in connection with the Contract.

26.2 New York State Contract System Workforce Utilization Reporting Module (Construction)

The Contractor shall submit, and shall require each of its subcontractors to submit, a Workforce Audit throughout the term of this Contract, by the 10th day of each month to report the actual workforce utilized during the previous month in the performance of the Contract by the specified categories listed including ethnic background, gender, and Federal

occupational categories. Contractor shall coordinate with its subcontractors to ensure that all workers associated with this Contract are properly counted and reported. To prepare the report, Contractor and its subcontractors shall use the New York State Contract System Workforce Audit Module found at the following website:

https://ny.newnycontracts.com/

The Workforce Audit must be submitted electronically in the New York State Contract System (NYSCS). Separate audits shall be completed by Contractor and all subcontractors. In limited instances, the Contractor or subcontractor may not be able to separate out the workforce utilized in the performance of the Contract from its total workforce. When a separation can be made, the Contractor or subcontractor shall submit the Workforce Audit and indicate that the information provided relates to the actual workforce utilized on the Contract. When the workforce to be utilized on the Contract cannot be separated out from the Contractor's or subcontractor's total workforce, the Contractor or subcontractor shall submit the Workforce Audit and indicate that the information provided is the Contractor's or subcontractor's total workforce during the subject time frame, not limited to work specifically performed under the Contract.

26.3 Contractor shall comply with the provisions of the Human Rights Law and all other State and Federal statutory and constitutional non-discrimination provisions. Contractor and subcontractors shall not discriminate against any employee or applicant for employment because of race, creed (religion), color, sex, national origin, sexual orientation, military status, age, disability, predisposing genetic characteristic, marital status or domestic violence victim status, and shall also follow the requirements of the Human Rights Law with regard to non-discrimination on the basis of prior criminal conviction and prior arrest.

ARTICLE 27- MWBE COMPLIANCE

27.1 By entering into a Contract with OGS, Contractor certifies that it has submitted a completed MWBE Utilization Plan via the New York State Contract System (NYSCS) prior to contract award and will follow such Plan for the performance of MWBEs on the Contract pursuant to the prescribed MWBE goals set forth in Section 16.7.1 of this Supplement. The NYSCS may be accessed at **https://ny.newnycontracts.com**. The Utilization Plan shall list the MWBEs the Bidder intends to use to perform the Contract, a description of the Contract scope of work the Bidder intends the MWBE to perform to meet the goals on the Contract, and the estimated, or if known, actual dollar amounts to be paid to an MWBE. If Contractor is unable to submit such Plan through the NYSCS, Contractor certifies that it used Form BDC 328 (Contractor's Utilization Plan) to submit the Plan. The BDC 328 form is available for download at https://ogs.ny.gov/mwbe/forms.

27.2 By entering into the Contract, Bidder/Contractor understands that only sums paid to MWBEs for the performance of a commercially useful function, as that term is defined in 5 NYCRR § 140.1, may be applied towards the achievement of the applicable MWBE participation goal. When an MWBE is serving as a broker on the Contract, only 25 percent of all sums paid to a broker shall be deemed to represent the commercially useful function performed by the MWBE.

27.3 OGS will review the submitted MWBE Utilization Plan and advise the Bidder of OGS' acceptance or issue a notice of deficiency within 30 calendar days of receipt. Contractor understands that making false representations or including information evidencing a lack of good faith as part of, or in conjunction with, the submission of a Utilization Plan is prohibited by law and may result in penalties including, but not limited to, termination of a contract for cause, loss of eligibility to submit future bids, and/or withholding of payments.

27.4 Contractor further agrees that a failure to submit and/or use such MWBE Utilization Plan shall constitute a material breach of the terms of the Contract. Upon the occurrence of such a material breach, OGS shall be entitled to any remedy provided herein, including but not limited to, a finding of Contractor non-responsiveness.

27.5 Access to the Contractor's Books: The Contractor shall permit access to its books, records and accounts by the State for purposes of investigation to ascertain compliance with the provisions of this Article. The contractor shall include this provision in every subcontract so that such provision will be binding upon each subcontractor.

27.6 If the Contractor, after making good faith efforts, is unable to comply with MWBE goals, the Contractor may submit an Application for MWBE Waiver form (BDC 333) documenting good faith efforts by the Contractor to meet such goals. If the documentation included with the waiver request is complete, OGS shall evaluate the request and issue a written notice of acceptance or denial within twenty (20) business days of receipt.

27.7 If OGS, upon review of the MWBE Utilization Plan and updated Contractors list of Subcontractors and Suppliers determines that Contractor is failing or refusing to comply with the Contract goals and no waiver has been issued in regards to such non-compliance, OGS may issue a notice of deficiency to the Contractor. The Contractor must respond to the notice of deficiency within seven (7) business days of receipt. Such response may include a request for partial or total waiver of MWBE Contract Goals.

27.8 **Monthly MWBE Contractor Compliance Report**

27.8.1 In accordance with 5 NYCRR § 142.10, Contractor is required to report Monthly MWBE Contractor Compliance to OGS during the term of the Contract for the preceding month's activity, documenting progress made towards achievement of the Contract MWBE goals. OGS requests that all Contractors use the NYSCS to report subcontractor and supplier payments made by Contractor to MWBEs performing work under the Contract. The NYSCS may be accessed at **https://ny.newnycontracts.com**. This is a New York State-based system that all State agencies and authorities will be implementing to ensure uniform contract compliance reporting throughout New York State.

27.8.2 When a Contractor receives a payment from OGS under an OGS contract, it is the Contractor's responsibility to pay its subcontractors and suppliers in a timely manner. On or after the first day of each month, the Contractor will receive an e-mail or fax notification ("audit notice") indicating that a representative of its company needs to log-in to the NYSCS to report the company's MWBE subcontractor and supplier payments for the preceding month. The Contractor must also report when no payments have been made to a subcontractor or supplier in a particular month with entry of a zero dollar value in the NYSCS. Once subcontractor and supplier payments have been entered into the NYSCS, the subcontractor(s) and supplier(s) will receive an email or fax notification advising them to log into the NYSCS to confirm that they actually received the reported payments from the Contractor. It is the Contractor's responsibility to educate its MWBE subcontractors and suppliers about the NYSCS and the need to confirm payments made to them in the NYSCS.

27.8.3 To assist in the use of the NYSCS, OGS recommends that all Contractors and MWBE subcontractors and suppliers sign up for the following two webinar trainings offered through the NYSCS: "Introduction to the System – Vendor Training" and "Contract Compliance Reporting - Vendor Training" to become familiar with the NYSCS. To view the training schedule and to register visit:

https://ny.newnycontracts.com/events.asp.

27.8.4 As soon as possible after the Contract is approved, Contractor should visit https://ny.newnycontracts.com and click on "Account Lookup" to identify the Contractor's account by company name. Contact information should be reviewed and updated if necessary by choosing "Change Info." It is important that the staff member who is responsible for reporting payment information for the Contractor be listed as a user in the NYSCS. Users who are not already listed may be added through "Request New User." When identifying the person responsible, please add "- MWBE Contact" after their last name (i.e., John Doe – MWBE Contact) to ensure that the correct person receives audit notices from the NYSCS. NYSCS Technical Support should be contacted for any technical support questions by clicking on the links

for “Contact Us & Support” then “Technical Support” on the NYSCS website.

27.8.5 If Contractor is unable to report MWBE Contractor Compliance via the NYSCS, Contractor must submit Contractor’s Monthly Payment Report on Form BDC 58 to OGS, by the 10th day of each month during the term of the Contract, for the preceding month’s activity to: OGS OBD, 29th Floor Corning Tower, Empire State Plaza, Albany, NY 12242. Phone: 518-486-9284; Fax: 518-486-9285.

27.8.6 It is the Contractor’s responsibility to report subcontractor and supplier payments. Failure to respond to payment audits in a timely fashion through the NYSCS, or by paper to OGS, may jeopardize future payments pursuant to the MWBE liquidated damages clause in Section 27.9 below.

27.9 Liquidated Damages – MWBE Participation

27.9.1 Where OGS determines that Contractor is not in compliance with the requirements of the Contract and Contractor refuses to comply with such requirements, or if Contractor is found to have willfully and intentionally failed to comply with the MWBE participation goals, Contractor shall be obligated to pay liquidated damages to OGS.

27.9.2 Such liquidated damages shall be calculated as an amount equaling the difference between:

a. All sums identified for payment to MWBEs had the Contractor achieved the contractual MWBE goals; and

b. All sums actually paid to MWBEs for work performed or materials supplied under the Contract.

27.9.3 After the Contractor has been afforded the process it is due, if OGS determines that Contractor is liable for liquidated damages and such identified sums have not been withheld by OGS, Contractor shall pay such liquidated damages to OGS within sixty (60) days after they are assessed. Provided, however, that if the Contractor has filed a complaint with the Director of the Division of Minority and Women’s Business Development pursuant to 5 NYCRR § 142.12, liquidated damages shall be payable only in the event of a determination adverse to the Contractor following the complaint process.

27.10 Any suspicion of fraud, waste, or abuse involving the contracting or certification of MWBEs shall be immediately reported to ESD’s Division of Minority and Women’s Business Development at (855) 373-4692.

DOCUMENT 007310

SUPPLEMENTARY CONDITIONS - CONTRACTOR'S SUPERVISION

This supplement modifies the General Conditions. Where any part of the General Conditions is modified by this supplement, the unaltered provisions of that part shall remain in effect.

ARTICLE 6 - CONTRACTOR'S SUPERVISION

ARTICLE 6 Delete this Article in its entirety and replace with the following:

6.1 The Contractor shall designate in writing, competent supervision and/or management representatives as required below to represent the Contractor at all times with authority to act for the Contractor. All direction given to the Contractor's representatives shall be as binding as if given to the Contractor. A superintendent or project manager shall be classified as management representatives included in the Contractor's overhead and shall perform management, supervisory and/or administrative tasks (non labor) only. Individuals listed under this Article shall have the ability to effectively communicate (verbal and written) with all parties associated with the administration/supervision of this contract.

6.1.1 For contracts awarded up to $1,000,000 the Contractor shall provide a supervisor, for the Contractor's staff, who shall be in attendance at the Site throughout the active performance of the Work, including active performance of the Work by subcontractors.

6.1.2 For contracts awarded from $1,000,001 to $5,000,000, the Contractor shall provide a superintendent, for the Contractor's staff, who shall be in attendance at the Site throughout the active performance of the Work until Substantial Completion. Upon Substantial Completion the Contractor shall provide a supervisor who shall be in attendance at the Site throughout the active performance of the Work until Physical Completion. The superintendent's responsibilities include, but are not limited to, directing and scheduling the Work, attending all Project meetings, coordinating and controlling the Work of subcontractors, and ensuring full compliance with the Contract documents. The Contractor shall also provide a project manager for the Contractor's staff from award through Substantial Completion. The Project Manager's responsibilities shall include, but are not limited to, developing and maintaining the submittal system and project schedules, attending Project meetings, making purchasing and cost decisions on behalf of the Contractor, Orders on Contract responses and negotiations, and closeout and warranty documentation. The Contractor shall provide required information to the Director's Representative for the Project schedule.

6.1.3 For contracts awarded from $5,000,001 to $10,000,000, in addition to the requirements of Article 6.1.2, the contractor shall provide a Project Manager for the Contractor's staff that shall be in attendance at the site throughout the active performance of the Work until Substantial Completion.

6.1.4 For contracts awarded for more than $10,000,000, in addition to the requirements set forth in Article 6.1.3, if at any time the Contractor has more than five subcontractors performing Work on the Site simultaneously, the Contractor shall provide an additional Superintendent to coordinate the Work of the subcontractors.

6.2 Should the Director deem any employees of the Contractor not satisfactory or unfit for their duty, the Contractor shall dismiss them and they shall not again be employed on the Work.

6.2.1 Infractions that are dismissible for project managers, superintendents, or supervisors include, but are not limited to, the failure to develop and maintain Project schedules, failure to comply and enforce safety regulations, failure to schedule inspections or provide adequate notice as required by Contract Documents, failure to attend and adequately prepare for meetings as required by Contract Documents, and failure to follow directions regarding the Work provided by the Director's Representative.

6.3 The experience levels noted below in this Article will be used in evaluating the qualifications and experience of the supervisors, superintendents, and Project Managers, as applicable.

6.3.1 Supervisors, required by paragraph 6.1.1, shall have a minimum of five years of experience in the role of supervisor with a minimum of three projects of similar size and scope, and shall be subject to review and written approval by the Director's Representative before commencing the Work, and subsequently during the course of the Project if the supervisor is replaced after Work has commenced. The Contractor will provide references to validate qualifications of the proposed supervisor upon request.

6.3.2 Superintendents, required for any contracts awarded above $1,000,000 as set forth in Article 6.1.2, shall have a minimum of five years of experience in the role of Superintendent with a minimum of three projects of similar size and scope, and shall be subject to review and written approval by the Director's Representative before commencing the Work, and subsequently during the course of the Project if the Superintendent is replaced after Work has commenced. The Contractor will provide references to validate qualifications of the proposed Superintendent upon request.

6.3.3 The Project Manager, required for any contracts awarded above $1,000,000 as set forth in Article 6.1.2, shall have a minimum of five years of experience in the role of Project Manager with a minimum of three projects of similar size and scope, and shall be subject to review and written approval by the Director's Representative before commencing the Work, and subsequently during the course of the Project if the Project Manager is replaced after Work has commenced. The Contractor will provide references to validate qualifications of the proposed Project Manager upon request.

6.4 No subcontractor shall be allowed at the Work Site before approval by the Director and the Contracting Officer. Before any part of the Contract shall be sublet or material purchased, the Contractor shall submit to the Director in writing the name of each proposed subcontractor and supplier and obtain the Director's written consent to such subcontractor and supplier. The names shall be submitted in ample time to permit acceptance or rejection of each proposed subcontractor and supplier by the Director or Contracting Officer without causing delay in the Work of the Project. The Contractor shall promptly furnish such information as the Director or Contracting Officer may require concerning the proposed subcontractor's and supplier's ability and qualifications, and certification status as a Minority- and Women-Owned Business Enterprises and/or Service-Disabled Veteran-Owned Business. For each proposed subcontractor, the Contractor shall also provide the New York State Department of Labor registration number in accordance with NYS Labor Law Section 220-i. Each request for approval of a subcontractor whose subcontract will be valued at $10,000 or more shall also be accompanied by a NYS Vendor Responsibility Questionnaire - For-Profit Construction properly completed and executed by the proposed subcontractor.

6.5 The Contractor's use of subcontractors shall not diminish the Contractor's obligations to complete the Work in accordance with the Contract. The Contractor shall control and coordinate the Work of its subcontractors.

6.6 The Contractor shall be responsible for informing its subcontractors and suppliers of all the terms, conditions and requirements of the Contract Documents including, but not limited to, the General Conditions, Supplementary Conditions, the Drawings and Specifications, Appendix A, and changes made by Addenda and Orders on Contract.

END OF DOCUMENT

DOCUMENT 007311

SUPPLEMENTARY CONDITIONS – PAYMENT

This supplement modifies the General Conditions. Where any part of the General Conditions is modified by this supplement, the unaltered provisions of that part shall remain in effect.

ARTICLE 21 - PAYMENT

Add the following sub-paragraph:

21.2.1 The Director or the Contracting Officer may withhold payment requisitions or refuse to approve a portion of a payment requisition if the Contractor fails to provide an agreed to Baseline Project Work Plan, Project Schedule Updates, Recovery Project Schedule, or other scheduling requirements in accordance with Division 01 - General Requirements.

END OF DOCUMENT

DOCUMENT 007322

SUPPLEMENTARY CONDITIONS - WORKERS' COMPENSATION

This supplement modifies the General Conditions. Where any part of the General Conditions is modified by this supplement, the unaltered provision of that part shall remain in effect.

ARTICLE 19 - INSURANCE - BUILDER'S RISK, LIABILITY AND WORKERS' COMPENSATION

Add the following paragraphs to 19.2.1:

The contractor agrees that pursuant to WCL Section 141-b, this contract may be terminated if it is determined that at the time of either the bid submission or contract award, the contractor was, in fact, debarred by WCL Section 141-b, or was a substantially owned affiliate of a debarred contractor.

Additionally, the contractor agrees that it must replace, at no additional charge to the State, any subcontractor who the State or the contractor learns was debarred by WCL Section 141-b prior to or during the contract.

END OF DOCUMENT

DOCUMENT 007323

SUPPLEMENTARY CONDITIONS – VENDOR RESPONSIBILITY

This supplement modifies the General Conditions. Where any part of the General Conditions is modified by this supplement, the unaltered provision of that part shall remain in effect.

ARTICLE 25 - MISCELLANEOUS PROVISIONS

Add the following paragraphs:

25.10 VENDOR RESPONSIBILITY: Contractor shall at all times during the Contract term remain responsible. Contractor agrees, if requested by the Commissioner of OGS or his or her designee, to present evidence of its continuing legal authority to do business in New York State, integrity, experience, ability, prior performance, and organizational and financial capacity.

The Commissioner of OGS or his or her designee, in his or her sole discretion, reserves the right to suspend any or all activities under this Contract, at any time, when he or she discovers any information that calls into question the responsibility of Contractor. In the event of such suspension, Contractor will be given written notice outlining the particulars of such suspension. Upon issuance of such notice, Contractor must comply with the terms of the suspension order. Contract activity may resume at such time as the Commissioner of OGS or his or her designee issues a written notice authorizing a resumption of performance under the contract.

Upon written notice to Contractor, and a reasonable opportunity to be heard with appropriate OGS officials or staff, the Contract may be terminated by the Commissioner of OGS or his or her designee at Contractor's expense where Contractor is determined by the Commissioner of OGS or his or her designee to be non-responsible. In such event, the Commissioner of OGS or his or her designee may complete the contractual requirements in any way he or she may seem advisable and pursue available legal or equitable remedies for breach.

In no case shall termination of the contract by the state be deemed a breach thereof, nor shall the state be liable for any damages or lost profits or otherwise, which may be sustained by Contractor as a result of such termination.

END OF DOCUMENT

DOCUMENT 007324

SUPPLEMENTARY CONDITIONS - ENCOURAGING USE OF NEW YORK STATE BUSINESSES IN CONTRACT PERFORMANCE

This supplement modifies the General Conditions. Where any part of the General Conditions is modified by this supplement, the unaltered provisions of that part shall remain in effect.

ARTICLE 25 – MISCELLANEOUS PROVISIONS

Add the following paragraphs:

25.11 Encouraging New York State Businesses

New York State businesses have a substantial presence in State contracts and strongly contribute to the economies of the state and the nation. In recognition of their economic activity and leadership in doing business in New York State, bidders/proposers for this contract are strongly encouraged and expected to consider New York State businesses in the fulfillment of the requirements of the contract. Such partnering may be as subcontractors, suppliers, protégés or other supporting roles.

Bidders need to be aware that all government entities benefiting from this contract will be strongly encouraged, to the maximum extent practical and consistent with legal requirements, to use responsible and responsive New York State businesses in purchasing commodities that are of equal quality and functionality and in utilizing services and technology. Furthermore, bidders are reminded that they must continue to utilize small, minority and women-owned businesses, consistent with current State law.

Utilizing New York State businesses in State contracts will help create more private sector jobs, rebuild New York's infrastructure, and maximize economic activity to the mutual benefit of the contractor and its New York State business partners. New York State businesses will promote the contractor's optimal performance under the contract, thereby fully benefiting the public sector programs that are supported by associated procurements.

Public procurements can drive and improve the State's economic engine through promotion of the use of New York businesses by its contractors. The State therefore expects bidders to provide maximum assistance to New York businesses in their use of the contract. The potential participation by all kinds of New York businesses will deliver great value to the State and its taxpayers.

Bidders can demonstrate their commitment to the use of New York State businesses by responding to the question shown below ***on the Bid Form for this project***:

Will New York State Businesses be used in the performance of this contract? _____ _____
Yes No

The successful bidder who answers "Yes" to this question on the bid form will be required to list the New York State business(es) that will be used on the **Contractor's List of Subcontractors/Suppliers** (Form BDC 329), which must be submitted within ***fifteen (15) days after award*** of the contract.

END OF DOCUMENT

DOCUMENT 007326

SUPPLEMENTARY CONDITIONS - ORDERS ON CONTRACT (CHANGE ORDERS)

This supplement modifies the General Conditions. Where any part of the General Conditions is modified by this supplement, the unaltered provision of that part shall remain in effect.

ARTICLE 10 - ORDERS ON CONTRACT (CHANGE ORDERS)

Replace paragraph 10.1 with the following:

10.1 The State may make changes by altering, adding to or deleting from the Work, and adjusting the Contract sum accordingly. All changed Work shall be executed in conformity with the terms and conditions of the Contract Documents unless otherwise provided in the order on contract. Any change in the Contract sum or time for completion of the described work of the order on contract shall be contained in the order on contract. The Contractor shall complete a time impact analysis (TIA) pursuant to specification section 013113 concurrently with the pricing of the order on contract. Potential time adjustments shall be determined based on the TIA with presented costs. If the Work of the order on contract impacts the substantial completion date, the Contractor must notify the Director's Representative prior to the negotiation of the order on contract and a time adjustment may be issued. If the Contractor does not develop a time impact analysis during the negotiation of an order on contract, the Contractor shall forfeit their right to a time adjustment.

Replace paragraph 10.5.1 with the following:

10.5.1 The contractor shall submit a responsive cost proposal to the Director's Representative in proper form subject to the provisions of this Article. The contractor shall respond no later than 15 calendar days from the date of a "request for proposal" from the Director's Representative with their cost proposal and time impact analysis (TIA). If the contractor believes additional time is required to prepare and submit a responsive proposal, a justification and proposed response duration must be submitted to the Director's Representative or his/her designated representative within 10 days from the date of a "request for proposal". If approved, the 10-day requirement will be extended as the State may deem appropriate. Should the contractor fail to respond or fail to submit the required cost proposal within the 15-day requirement, the State shall determine a fair market value for the work proposed and will issue an order on contract or field order to the contract. The Contractor, by failing to respond to a request for proposal or provide an acceptable and responsive cost proposal; waives any claim or rights to any extra and or additional costs and/or time as may be determined by the Contracting Officer, and the overrides resulting from this action will be limited to the values as set forth in section 012200.

END OF DOCUMENT

DOCUMENT 007327

SUPPLEMENTARY CONDITIONS – SDVOB

This supplement modifies the General Conditions. Where any part of the General Conditions is modified by this supplement, the unaltered provisions of that part shall remain in effect.

Add the following article:

ARTICLE 28 – PARTICIPATION OPPORTUNITIES FOR NEW YORK STATE CERTIFIED SERVICE-DISABLED VETERAN-OWNED BUSINESSES

Article 3 of the Veterans' Services Law provides for more meaningful participation in public procurement by certified Service-Disabled Veteran-Owned Businesses ("SDVOB"), thereby further integrating such businesses into New York State's economy. OGS recognizes the need to promote the employment of service-disabled veterans and to ensure that certified service-disabled veteran-owned businesses have opportunities for maximum feasible participation in the performance of OGS contracts.

In recognition of the service and sacrifices made by service-disabled veterans and in recognition of their economic activity in doing business in New York State, Bidders are expected to consider SDVOBs in the fulfillment of the requirements of the Contract. Such participation may be as subcontractors or suppliers, as protégés, or in other partnering or supporting roles.

28.1 Contract Goals

28.1.1 OGS hereby establishes overall goals under this contract of 6% for SDVOB participation for the C trade contractor, 3% for SDVOB participation for the E trade contractor, 3% for SDVOB participation for the H trade contractor, and 3% for SDVOB participation for the P trade contractor, based on the current availability of qualified SDVOBs. Trades with 0% goals are encouraged to make "good faith efforts" to promote and assist in the participation of SDVOBs on the Contract for the provision of services and materials. For purposes of providing meaningful participation by SDVOBs, the Bidder/Contractor should refer to the **List of Certified NYS Service-Disabled Veteran-Owned Businesses**, which can be accessed from the OGS website page at the following link:

https://online.ogs.ny.gov/SDVOB/search .

Questions regarding compliance with SDVOB participation goals should be directed to the Designated Contacts specified in Document 002113 Instructions to Bidders. Additionally, following Contract execution, Contractor is encouraged to contact DCSDVOB@ogs.ny.gov to discuss additional methods of maximizing participation by SDVOBs on the Contract.

28.1.2 Contractor must document "good faith efforts" to provide meaningful participation by SDVOBs as subcontractors or suppliers in the performance of the Contract (see clause 28.4 below).

28.2. SDVOB Utilization Plan

28.2.1 The Contractor's SDVOB Utilization Plan, using the form BDC 328S, available for download at https://ogs.ny.gov/veterans/forms, shall list the SDVOBs that the Bidder intends to use to perform the Contract, a description of the work that the Bidder intends the SDVOB to perform to meet the goals on the Contract, and the estimated dollar amounts to be paid to an SDVOB, or, if not known, an estimate of the percentage of Contract work the SDVOB will perform. By signing the Utilization Plan, the Bidder acknowledges that making false representations or providing information that shows a lack of good faith as part of, or in conjunction with, the submission of a Utilization Plan is prohibited by law and may result in

penalties including, but not limited to, termination of a contract for cause, loss of eligibility to submit future bids, and/or withholding of payments. Any modifications or changes to the agreed participation by SDVOBs after the Contract award and during the term of the Contract must be reported on a revised SDVOB Utilization Plan and submitted to OGS.

28.2.2 The apparent low bidder must submit the completed SDVOB Utilization Plan within seven (7) calendar days after the bids are opened. OGS will review the submitted SDVOB Utilization Plan and advise the bidder of OGS acceptance or issue a notice of deficiency within twenty (20) calendar days of receipt.

28.2.3 If a notice of deficiency is issued, Bidder/Contractor agrees that it shall respond to the notice of deficiency, within nine (9) calendar days of receipt, by submitting to OGS a written remedy in response to the notice of deficiency. If the written remedy that is submitted is not timely or is found by OGS to be inadequate, OGS shall notify the Bidder/Contractor and direct the Bidder/Contractor to submit, within seven (7) calendar days of notification by OGS, a request for a partial or total waiver of SDVOB participation goals on form BDC 333S. Failure to file the waiver form in a timely manner may be grounds for disqualification of the bid or proposal.

28.2.4 OGS may disqualify a Bidder's bid or proposal as being non-responsive under the following circumstances:

a. If a Bidder fails to submit an SDVOB Utilization Plan;

b. If a Bidder fails to submit a written remedy to a notice of deficiency;

c. If a Bidder fails to submit a request for waiver; or

d. If OGS determines that the Bidder has failed to document good faith efforts.

28.2.5 If awarded a Contract, Contractor certifies that it will follow the submitted SDVOB Utilization Plan for the performance of SDVOBs on the Contract pursuant to the prescribed SDVOB contract goals set forth in this section.

28.2.6 Contractor further agrees that a failure to use SDVOBs as agreed in the Utilization Plan shall constitute a material breach of the terms of the Contract. Upon the occurrence of such a material breach, OGS shall be entitled to any remedy provided herein, including but not limited to, a finding of Contractor non-responsibility.

28.3 Request for Waiver

28.3.1 In accordance with 9 NYCRR § 252.2(m), a Bidder/Contractor that is able to document good faith efforts to meet the goal requirements, as set forth in 28.4 below, may submit a request for a partial or total waiver on form BDC 333S (https://ogs.ny.gov/veterans/forms), accompanied by supporting documentation. A Bidder may submit the request for waiver at the same time it submits its SDVOB Utilization Plan. If a request for waiver is submitted with the SDVOB Utilization Plan and is not accepted by OGS at that time, the provisions of clauses 28.2.2, 28.2.3 and 28.2.4 will apply. If the documentation included with the waiver request is complete, OGS shall evaluate the request and issue a written notice of acceptance or denial within 20 days of receipt.

28.3.2 Contractor shall attempt to utilize, in good faith, the SDVOBs identified within its SDVOB Utilization Plan, during the performance of the Contract. Requests for a partial or total waiver of established goal requirements made subsequent to Contract award may be made at any time during the term of the Contract to OGS, but must be made prior to the submission of a request for final payment on the Contract. Such waiver requests shall be made on form BDC 333S, accompanied by supporting documentation, and emailed to ogs.sm.sdvobcomp@ogs.ny.gov.

28.3.3 If OGS, upon review of the SDVOB Utilization Plan (BDC 328S) and Contractor's Monthly SDVOB Payment Report (BDC 58S), determines that Contractor is failing or refusing to comply with the contract goals and no waiver has been issued in regards to such non-compliance, OGS may issue a notice of deficiency to the Contractor. The Contractor must respond to the notice of deficiency within nine (9) calendar days of receipt. Such response may include a request for partial or total waiver of SDVOB contract goals.

28.4 Required Good Faith Efforts

In accordance with 9 NYCRR § 252.2(n), Contractors must document their good faith efforts toward utilizing SDVOBs on the Contract. Evidence of required good faith efforts shall include, but not be limited to, the following:

a. A list of the general circulation, trade, and other publications and dates of publications in which the Contractor solicited the participation of certified SDVOBs as subcontractors/suppliers, copies of such solicitations, and any responses thereto.

b. A list of certified SDVOBs that were solicited for this Contract. Provide proof of dates or copies of the solicitations and copies of the responses made by the certified SDVOBs. Describe specific reasons that responding certified SDVOBs were not selected.

c. Descriptions of the Contract documents, plans and specifications made available to certified SDVOBs by the Contractor when soliciting their participation and steps taken to structure the scope of work for the purpose of subcontracting with, or obtaining supplies from, certified SDVOBs.

d. A description of the negotiations between the Contractor and certified SDVOBs for the purposes of complying with the SDVOB goals of this Contract.

e. Dates of any pre-bid, pre-award, or other meetings attended by Contractor, if any, scheduled by OGS with certified SDVOBs whom OGS determined were capable of fulfilling the SDVOB goals set in the Contract.

f. Other information deemed relevant to the request.

28.5 Monthly SDVOB Contractor Compliance Report

In accordance with 9 NYCRR § 252.2(q), Contractor is required to report Monthly SDVOB Contractor Compliance each month to OGS during the term of the Contract for the preceding month's activity, documenting progress made towards achieving the Contract SDVOB goals. This information must be reported by the Contractor using form BDC 58S (form and instructions located at https://ogs.ny.gov/veterans/forms) and emailed by the 10th day of each month for the preceding month's activity to ogs.sm.sdvobcomp@ogs.ny.gov.

28.6 Breach of Contract and Damages

In accordance with 9 NYCRR § 252.2(s), any Contractor found to have willfully and intentionally failed to comply with the SDVOB participation goals set forth in the Contract shall be found to have breached the contract and Contractor shall pay damages as set forth therein.

END OF DOCUMENT

DOCUMENT 007331

SUPPLEMENTARY CONDITIONS – LABOR LAW PROVISIONS

This supplement modifies the General Conditions. Where any part of the General Conditions is modified by this supplement, the unaltered provisions of that part shall remain in effect.

ARTICLE 23 – LABOR LAW PROVISIONS

Add the following paragraph:

23.7 In accordance with New York Labor Law §220-i, the Contractor and all subcontractors shall be registered with the New York State Department of Labor prior to commencing any Work. The Contractor is responsible for ensuring and verifying that all subcontractors are registered before they commence work on the project. Any delays or costs incurred due to a Contractor's or subcontractor's failure to be registered, or the Contractor's failure to verify such registration, shall be borne solely by the Contractor and shall not be grounds for an extension of time or additional compensation.

END OF DOCUMENT

SECTION 011000.01 - SUMMARY OF THE WORK

PART 1 - GENERAL

1.1 WORK COVERED BY CONTRACT DOCUMENTS

A. The title and location of the Work is printed on the cover of this Project Manual.

B. Type of Contract: Fixed price.

1.2 RELATED CONTRACTS

A. The Project consists of the following separate contracts:

1. Construction Work Project No. 47510 - C
2. HVAC Work Project No. 47510 - H
3. Plumbing Work Project No. 47510 - P
4. Electrical Work Project No. 47510 - E

B. The suffix letter at the end of the project number distinguishes the separate Contracts. The Sections in Division 01 of the Specifications which have more than one suffix letter (such as this Section) are common to each related Contract.

1.3 SUBSTANTIAL AND PHYSICAL COMPLETION DATES

A. Substantially complete the Work within 525 days after the Agreement is approved by the Comptroller.

1. The time allocated for the performance of work under this contract includes 10 days for notification of the Contractor of the Comptroller's approval of the Agreement.
2. The approval of the Agreement by the Comptroller constitutes the filing of the Contract Documents as a public record and notice to the Contractor that a fully executed contract exists between the Contractor and the State.

B. Physically complete the Work within 90 days after the established Substantial Completion date.

1.4 CONTRACT AWARD SUBMITTALS

A. Submittal No. 1: Submit the CONTRACTOR'S LIST OF SUBCONTRACTORS-SUPPLIERS information required in SCHEDULES AND RECORDS Article in Specification Section 013000 not later than 15 days after approval of the Contract by the Comptroller.

B. Submittal No. 2: Submit Preliminary Project Schedule related information noted in 013113 Project Planning and Scheduling or 013200 Construction Progress Documentation, whichever

section is applicable, within 15 days after approval of the Contract by the Comptroller for review by the Director's Representative and OGS Scheduling.

C. Submittal No. 3: Submit the Submittal Coordinator Qualifications not later than 10 days after Award. Include resume and references, and other certification, licenses, or other requested information.

1.5 RESTRICTED WORK PERIOD

A. Construction Work Contract: Do not perform the Waterproofing and related Work on or after December 1st and up to, but not including April 1st unless approved otherwise, in writing, by the Director. During this period, clear the work area of materials, equipment, and debris.

B. Construction Work Contract: Do not perform the Asphalt Paving Work on or after November 15th and up to, but not including April 15th, unless approved otherwise, in writing, by the Director. During this period, leave the disturbed earthwork areas stabilized for winter shutdown and clear the Work area of materials, equipment, and debris.

1.6 ITEMS NOT INCLUDED

A. The following items shown on the Drawings are not included in the Contract:

1. Items indicated "NIC" (Not in Contract).
2. Existing construction, except where such construction is to be removed, replaced, or altered.

1.7 CONFINED SPACE

A. Comply with confined space and permit-required confined space as defined in Title 29, Part 1910, Section 146 of the Code of Federal Regulations (29CFR 1910.146).

B. Comply with Safety Requirements for Confined Spaces (ANSI/ASSE Z117.1-2009).

C. All spaces shall be treated as permit-required confined spaces until the Contractor and/or subcontractors are able to re-classify the space to a non-permit confined space as per 29CFR 1910.146 and ANSI/ASSE Z117.1-2009.

D. Indicated confined spaces are not intended to limit or define Contractor's or subcontractors' regulatory compliance requirements. In addition to confined spaces indicated on the drawings, other confined spaces may be present or created by the work of this contract. Notify the Director's Representative, in writing, of confined spaces created or eliminated during execution of the Work.

E. For the purpose of inspecting ongoing work, furnish at no additional cost to the State, personnel, as directed, to allow the Director's Representative to enter confined space and permit-required confined space in compliance with Title 29, Part 1910, Section 146 of the Code of Federal Regulations (29CFR 1910.146).

1.8 OCCUPANCY

A. This is an occupied Facility. The Project Site, except for the work areas, will be occupied during execution of the Work. Ingress to and egress from the adjacent buildings within the DOT facility shall be maintained at all times.

1.9 CONTRACTOR USE OF PREMISES

A. Work hours shall be as established by the Facility authorities thru the Director's Representative.

B. Inform the Director's Representative of work area access requirements. The Director's Representative will coordinate and schedule the requirements with Facility staff to obtain and ensure timely availability of work areas.

C. Check in with the Facility Representative, as directed, at the beginning of each workday. Furnish information regarding where employees will be working during the day.

D. Comply with the Facility's Visitor Identification Policy. A copy of the current policy will be distributed at the initial job meeting.

E. The following items are not allowed on the Site or on Facility premises.

1. Firearms, ammunition, weapons, and dangerous instruments (other than tools required for the Work).
2. Alcoholic beverages and persons under the influence of same.
3. Cannabis and persons under the influence of same. Cannabis, as used herein shall refer to any form of cannabis that has psychoactive properties.
4. Illegal controlled substances and persons under the influence of same.
5. Cameras (except with written permission from the Director's Representative).

F. Comply with Facility policies relating to smoking at the Site.

G. Routes of ingress and egress within the facility to the location of the Work shall be as directed by the Director's Representative.

H. Store materials and perform the Work so that pedestrian and vehicular traffic is not obstructed.

I. Do not diminish the level of life safety during performance of the Work.

J. Utility Outages and Shutdowns: Do not interrupt utility services or branch services within the building except for the time required to make new connections. Arrange with the Director's Representative for the time and duration of interruptions of services. Provide temporary services required to maintain building services at all times other than during scheduled interruptions.

K. Be responsible and accountable for employees, suppliers, subcontractors and their employees, with regard to their use of the premises. Direct them to comply with the Facility Regulations and with the security and traffic regulations.

L. Furnish Facility authorities with a telephone number or method to contact the supervisor for the Work in case of an emergency after work hours, including weekends and holidays.

M. Comply with applicable federal and State of New York Right-to-Know Law provisions. Provide Safety Data Sheets (SDS) documents for products that have SDS data prior to use on the project site.

1. Upload and maintain electronic SDS documents on the Submittals Website (SDS tab).
2. SDS tab is organized by prime contracts. To be readily identified, name products with SDS by specification section number and product name.
3. Supply and maintain one hard copy of the appropriate SDS on the project site and one hard copy with the Facility's Right-to-Know Information Officer.

N. Direct employees to be watchful for people in or near the work area where safety hazards may be present. Notify the Facility Safety/Security Department, if necessary, to remove them from the work area or Site.

O. Report fire and other emergency situations to the Facility Safety/Security Department immediately.

1.10 OPENINGS AND CHASES IN NEW CONSTRUCTION

A. Construction Work Contract:

1. Unless specifically indicated otherwise, provide openings, chases, and similar items in new construction provided under this Contract, as required for items to be provided under related contracts.
2. After the installation and completion of the items for which openings and chases have been provided, build in, over, around and finish the openings and chases to complete the Work.
3. Provide all cutting, patching, and refinishing resulting from failure to provide the required openings and chases, if the necessary information was furnished by the related contractor before 24 hours of start of the applicable part of the Work.
4. If related contractors fail to furnish drawings or written information covering the openings and chases they require in new construction at least 24 hours before installation of the Work affected by those items, the related contractors will be required to do all cutting, patching, and refinishing of the construction so affected, at their own expense.

B. HVAC Work, Plumbing Work, and Electrical Work Contracts:

1. Unless specifically indicated otherwise, furnish drawings or written information to the Construction Work Contractor covering the openings and chases required in new construction for the Work. If such information is not furnished at least 24 hours before start of the applicable part of the Construction Work Contractor's work, all necessary cutting, patching, and refinishing will be included in the Contract at no additional cost to the State.

C. All Contracts: Locate and field drill or cut required openings under 10 inches (in diameter or on a side), which were not plant fabricated, in precast prestressed concrete units after the units have been installed. Such openings and/or cutting of prestressing strand shall be approved by the Design Engineer and prestressed Unit manufacturer before drilling or cutting.

1. Refinish exposed surfaces damaged during drilling or cutting operations (if unit is not structurally damaged) to match adjacent area.

2. Replace units structurally damaged during drilling or cutting operations.

1.11 REFERENCE SPECIFICATIONS AND STANDARDS

A. Comply with the requirements of the various specifications and standards referred to in these Specifications, except where they conflict with the requirements of these Specifications. Such reference specifications and standards shall be the date of latest revision in effect at the time of receiving bids unless the date is given.

B. DOT Specifications: If the abbreviation DOT appears in these Specifications, it shall mean the most current edition of the New York State Department of Transportation, Office of Engineering specifications entitled "STANDARD SPECIFICATIONS - CONSTRUCTION AND MATERIALS", including all applicable Addenda in effect at the time of receipt of bids. The DOT specifications may be purchased from the Department of Transportation, Plan and Publication Sales, 50 Wolf Road, Albany, NY 12232, (518) 457-2124.

1.12 LAYING OUT

A. Examine the Contract Documents thoroughly and promptly report any errors or discrepancies to the Director's Representative before commencing the Work.

B. Lay out the Work in accordance with the Contract Documents.

1. Layouts which require the establishment of property lines or monuments shall be performed by a Land Surveyor licensed by New York State.

1.13 SPECIAL INSPECTIONS

A. Special Inspections and tests are required by Chapter 17 of the Building Code of New York State (BCNYS). Inspections & Testing Services will be provided by the state unless otherwise noted.

B. Contractors are responsible for notifying the Directors Representative regarding individual inspections listed in the **STATEMENT OF SPECIAL INSPECTIONS**. Contractors shall cooperate with the inspectors and testing agencies and sufficient notice and lead time (minimum 48 hours) must be allowed for inspection and testing to be performed.

C. Where deficiencies are identified, the contractor must take corrective actions to comply with the contract documents or remedy the deficiencies in accordance with Article 9 of the General Conditions.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000

SECTION 011100 - SAFETY

PART 1 - GENERAL

1.1 SUMMARY

A. This section requires compliance with applicable Safety codes, standards, and regulations, including but not limited to OSHA, Building Code of New York State, Fire Code of New York State, and Facility Regulations.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Summary of the Work: Section 011000.

B. Regulatory Requirements: Section 014100.

1.3 DEFINITIONS, ABBREVIATIONS

A. OSHA: Occupational Safety and Health Administration.

B. BCNYS: Building Code of New York State.

C. EBCNYS: Existing Building Code of New York State.

D. FCNYS: Fire Code of New York State.

E. NFPA: National Fire Protection Association.

F. NEC: NFPA 70E.

1.4 SUBMITTALS

A. Provide a SITE SPECIFIC SAFETY PLAN no later than 15 days after approval of the Contract by the Comptroller. The plan must include at a minimum:

1. Cover page including Project Name/Location/Project Number/Contractor Name/Potential Start/Finish Dates.
2. Complete Scope of work.
3. Roles and Responsibilities page identifying Supervision, list of the names of all competent and/or qualified persons, including their qualifications, for each activity requiring a competent person i.e. excavations, scaffolding, rigging, fall protection, etc.
4. A program for implementing appropriate PPE as specified in the High 5. Hazard Assessment detailed in Subparagraph 1.04 A.11 below.
5. A program for assuring employees have proper work attire, i.e. substantial sole safety-toed footwear, long pants, shirts with minimum 4-inch sleeves, etc.

6. A 100% 6-foot conventional fall protection program which provides full body harnesses, lanyards (connectors), and anchorage points, or guardrails for all trades when working 6 feet above a lower level.

    a. Exception:

        1) When the employer can demonstrate that it is infeasible or creates a greater hazard to utilize these systems, the employer shall develop and implement a Fall Protection Plan, which meets the requirements of paragraph (k) 1926.502. This plan must be approved before implementation by the applicable OGS Regional Safety Manager.
        2) When working from portable ladders.

7. A program for raising employee awareness through the use of weekly Safety Talks (i.e. "Toolbox Talks" or "Tailgate Meetings") on topics related to upcoming/relevant work on the project. Contractor shall be required to verify that all employees on site participated in meeting, with documentation submitted to the Director's Representative.
8. A written Respirable Silica Protection Plan, including tasks for which employees could reasonably be expected to be exposed to harmful silica dust, and control methods that will be used to limit or eliminate exposure, as well as any PPE necessary to ensure protection.
9. Identify specific hazards related to this Project, and how employees will be protected from those hazards.
10. High Hazard Assessment's detailing procedures for all high hazard work activities including, but not limited to:

    a. All lifts involving cranes or material handling equipment.
    b. Scaffolding where scaffold working deck is expected to be 10' or higher from a lower level.
    c. Demolition.
    d. Excavations where anticipated depth is 5' or more.
    e. Hot work activities, which shall follow all applicable requirements stated in NFPA 51B.
    f. Steel erection with specific fall protection requirements detailed.
    g. Work at elevations, including roofing work.
    h. Electrical work involving Lock Out - Tag Out (LOTO) procedures.

        1) High Hazard Assessments shall include a step-by-step breakdown of a given task, the hazards associated with each step, the controls that will be utilized to eliminate or minimize the hazards, and the PPE that will be used to protect from remaining hazards.
        2) All required certifications shall be provided for all applicable types of work with required training/certifications (i.e., Powder Actuated Tools, Aerial Lifts, Forklifts, Crane Operators License, etc.).

11. A project safety inspection program, with a minimum of one documented safety inspection per week, during the course of construction. Submit copies of all resultant inspection reports to the Director's Representative on a weekly basis.
12. A program for providing proper care for injured employees, including the name of the employee with First Aid/CPR certification who will be on site at all times during the course of construction, to include local hospital/medical facility locations and contact information.

13. Provide an Emergency Action and Evacuation Plan, including Fire Protection and Emergency Response, when applicable.

    a. Plan to include:

        1) Procedures for reporting a fire or other emergency.
        2) Procedures for emergency evacuation, including type of evacuation and exit route assignments.
        3) Emergency Contact information.
        4) Procedures on how to alert workers of an emergency.
        5) Procedures to account for all employees after evacuation and muster/evacuation points.
        6) A list of all major fire hazards, to include type of fire protection equipment necessary to control hazard.

B. Provide safety orientation training for each employee prior to their starting work on site. This orientation shall include, but not be limited to: Fitness for Duty (drug, alcohol, and cannabis policies), training on general safety hazards, site-specific safety policies and procedures, personal protective equipment, injury reporting and protocols, emergency evacuation and preferred medical providers, and HAZCOM (GHS Harmonization). Provide documentation of all safety orientation training for each new employee on the site, including all subcontractors, to the Director's Representative.

C. Accident Reporting: The Director's Representative shall be immediately notified of any and all accidents. A copy of a written accident report shall be furnished to the Director's Representative within 24 hours of an incident.

    1. After any incident on site resulting in an employee being injured or damage to property, a Post- Accident Review Investigation shall be held as soon as possible after any incident. As a minimum, this investigation will involve the injured person, his/her supervisor, the responsible project superintendent and/ or supervisor and the onsite safety supervisor. The contractor shall be responsible to provide a written Post-Accident Corrective Action Plan, which will detail immediate steps taken to correct any unsafe condition that led to injury/property damage, long-term actions to prevent repeat incidents from happening on the site, and roles and responsibilities of individuals who will be implementing the corrective measures, which will be reviewed for effectiveness and continually monitored for implementation.

1.5 STOP WORK ACTIVITY AUTHORITY

A. All NYS OGS Representatives have the authority to stop a work activity that exposes any Contractor employees to potentially serious injury and/or illness. The responsible Contractor shall immediately cease work, perform an assessment of the activity that is exposing employees to any Immediately Dangerous to Life or Health (IDLH) conditions, and take action necessary to satisfactorily address the unsafe condition(s), at no cost to the State. The activity may only resume when a NYSOGS Representative and respective Contractor's Safety Representative verify corrective measures have been satisfactorily completed. Any related impact to time of completion shall be considered within the Contractor's control.

B. No site work, other than mobilization, shall commence until the Site-Specific Safety Plan is approved.

1.6 ADDITIONAL SAFETY POLICIES THAT WILL BE ADHERED TO THROUGHOUT THE CONSTRUCTION PHASE

A. All contractors are required to utilize head (hardhat) and eye protection (safety glasses) at all times well within the project limits.

B. Any employee exposed to equipment/vehicles shall be required to utilize an ANSI Level 2 Safety Work Vest.

C. Contractors are strictly prohibited from utilizing any state-owned equipment or materials during construction.

D. All tools/equipment on multi-trade projects shall bear identifiable markings as to which contractor the tool/equipment belongs to. If any tool/equipment on the project does not have contractor's markings, the tool shall be immediately removed from the site until owner claims the tool/equipment.

E. Seatbelts shall be utilized when operating all heavy equipment designed to be operated in a seated position. When traveling in a vehicle, all employees shall be seated in a secured seat with a seatbelt in place.

F. Inspections of scaffolding prior to use, and excavations prior to entry shall be documented by an on-site competent person. Documented inspection will be available on-site for inspection by the Director's Representative.

G. All electrical cords/water hoses, if feasible, shall be run overhead to avoid additional slip/trip hazards. If not feasible due to physical restrictions, cords/hoses shall be placed to avoid all walkways and work areas.

H. All heavy equipment being utilized on site shall have a fire extinguisher of suitable size/rating within reach of operator.

I. Any fuel-powered equipment shall have a fire extinguisher of suitable size/rating no closer than 10 feet and no further than 25 feet from the equipment.

J. All electrical work shall be done when panels/lines/boxes have been de-energized and locked out, unless otherwise approved in writing by the Director's Representative.

K. An applicable sized Spill Kit shall be available on all jobsites where heavy equipment is being utilized.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011100

SECTION 012100 - ALLOWANCES

PART 1 - GENERAL

1.1 DESCRIPTION

A. Include in the contract sum the allowances stated in this Section.

B. Should the net cost be more than the specified amount of the allowance, the contract sum will be adjusted by Order on Contract in accordance with the General Conditions. No Work in excess of the allowance will be permitted except by Order on Contract. Should the net cost be less than the specified amount of the allowance, the balance will be deducted from the final payment.

1.3 ALLOWANCES FOR CONTINGENCIES

A. Include in the contract sum the amount indicated below to cover the cost of additional labor and materials for contingent activities within the scope of the Contract as directed in writing by Field Order. The Field Order will include a description of the Work and a method for determining the cost of such Work.

1. Construction Work Contract: $87,000.
2. HVAC Work Contract: $8,000.
3. Plumbing Work Contract: $11,000.
4. Electrical Work Contract: $36,000.

B. The value of the directed Work under this allowance will be determined by one or more of the methods authorized in Section 012200 which will be specified in the Field Order.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012100

SECTION 012200 - COST COMPUTATIONS

PART 1 - GENERAL

1.1 DESCRIPTION

A. The Contracting Officer shall determine the value of any order on contract or field order by one or more of the following methods:

1. Agreed to Amount:

a. By estimating the fair and reasonable cost of:

1) Labor, including all wages, required wage supplements and insurance/taxes required by law (workers' compensation, social security, disability, unemployment, etc.) paid to or on behalf of working foremen, workers and other employees below the rank of the Contractor's designated representative directly employed at the Site of the Project, and, on contracts with an award price less than $500,000, the Contractor's designated representative, regardless of job title or work status.
2) Materials (to be installed or turned over to the State).
3) Consumables are items that are used during the progression of the extra work that do not become a permanent part of the Work and as such are considered overhead.
4) Equipment, excluding hand tools, which, in the judgment of the State, would have been or will be employed exclusively and directly on the omitted work or extra work.
5) Where the omitted or extra work is performed directly by the Contractor; by adding to the total of such estimated costs a sum equal to 15 percent thereof, but, where the omitted or extra work is performed by a subcontractor, by adding a sum equal to 15 percent of said costs for the benefit of such subcontractor, and by adding, for the benefit of the Contractor (no further allowance will be made where extra work is performed by any sub-subcontractor), an additional sum equal to:

a) 10 percent of the first $10,000 of the above-estimated costs, including the subcontractor's percentage override.
b) Plus 5 percent of the next $90,000 of the total of said items.
c) Plus 3 percent of any sum in excess of $100,000 of the total of said items.
d) For the purposes of the aforesaid percentage overrides, the words "extra work" shall be defined as a complete item of added, modified, or changed work as described in writing to the Contractor and the reductions enumerated shall be applied individually to each Order on contract issued on a Contract. Such "extra work" may include the work of one or more trades and/or subcontractors or sub-subcontractors and shall include all labor, material, plant, equipment, tools and all

incidentals directly and/or indirectly necessary, related, involved in or convenient to the successful completion of the extra work item.

6) By accepting an amount agreed upon by both parties, which amount is to be calculated in a manner similar to that provided in subparagraph 1.01 A. 1. a.
7) Should the Contractor fail to submit the required proposal as required by Article 10.5.1, the Contractor shall be compensated as follows:

a) The costs will be determined by the State as described in 1.01 A. 1. a. above, but the percentages for profit and overhead will be as follows:

(1) Where the omitted or extra work is performed directly by the Contractor; by adding to the total of such estimated costs a sum equal to 10 percent thereof, but, where the omitted or extra work is performed by a subcontractor, by adding a sum equal to 10 percent of said costs for the benefit of such subcontractor, and by adding, for the benefit of the Contractor (no further allowance will be made where extra work is performed by any sub-subcontractor), an additional sum equal to:

(a) 5 percent of the first $10,000 of the above-estimated costs, including the subcontractor's percentage override.
(b) Plus 3 percent of any sum in excess of $10,000 of the total of said items.

2. ACTUAL COSTS - By determining the actual cost of the extra work in the same manner as in the above Subparagraph 1.01 A. 1.a. except that actual costs of the Contractor be utilized in lieu of estimated costs. The State shall have the option to utilize this method provided it notifies the Contractor of its intent to do so prior to the time the Contractor is properly authorized to commence performance of such work.
3. By applying the applicable price or prices set forth in the Contract Documents or by applying a unit price agreed to by both parties.
4. All profit, overhead and expense of whatsoever kind and nature, other than those set forth above in Subparagraphs A.1.a. 1), 2) and 4), and below in Paragraph 1.01 F., of the Contractor, its subcontractors and sub-subcontractors, are covered by the aforesaid percentage overrides and no additional payment therefore will be made by the State.

B. Irrespective of the method used or to be used by the State in determining the value of extra or omitted work, the Contractor shall, after receipt of a request, shall within 15 days submit to the State a detailed breakdown of the Contractor's estimate of the value of the omitted or extra work. The Contractor shall submit evidence, satisfactory to the Contracting Officer, to substantiate each and every item that constitutes their proposal for the change. The State shall promptly respond to such submission.

C. Whenever this Contract requires the determination of labor hours, it shall be determined as follows:

1. Labor Hours shall be based on the labor factors as published in "RSMeans" by Reed Construction Data. The latest versions of the following books shall be used:

a. Building Construction Cost Data
b. Electrical Cost Data
c. Mechanical Cost Data
d. Plumbing Cost Data
e. Site Work and Landscape Cost Data

2. In the event that a labor factor for an item of work is not available from these publications the Director shall establish a labor factor as to the amount of time it takes to perform an item of Work.

a. Conditions that affect the performance of the extra work whether addressed in the Contract Documents or not shall be taken into consideration and negotiated.
b. Unforeseen conditions or conditions that are not identifiable shall not be included in the Contractor's proposal. If while in the process of performing the omitted or extra work a condition or event that affects the work becomes evident, it will be addressed at that time via a field order or change order.

D. Materials:

1. Materials used in performance of the extra work shall conform to Contract Documents and shall be listed by description, quantity, and standard unit of measure.
2. Where the extended value of an item of material is FIVE THOUSAND DOLLARS OR MORE a quote or invoice from a supplier shall be included as part of the Contractor's proposal. The Director's Representative reserves the right to request substantiating pricing documentation to verify actual and reasonableness of any and all submitted costs. This requirement does not impede Subparagraph 1.01 B. above.
3. Travel costs including mileage, tolls, and overnight lodging and meal per diems incurred as a result of the extra work will be reimbursed at costs without any markup for the Contractor or subcontractor as the case may be. Daily travel to the project site must exceed 35 miles, one way, from the Contractor's office address to claim mileage and toll expenses; only mileage beyond 35 miles will be reimbursed. Distance must exceed 50 miles, one way, from Contractor's office address to the project site to claim overnight lodging and meal per diems. Actual cost for overnight lodging and meal per diems will be reimbursed up to the maximum rates listed per locality, as established by U.S. General Services Administration (GSA).
4. Personal Protection equipment required for hazardous materials abatement and materials used to create critical barriers and protection barriers, provided that they are expended during the performance of the extra work or turned over to the State at the request of the Director's Representative, are reimbursable as part of an order on contract.

E. Whenever this Contract requires the determination of the cost of equipment, it shall be determined as follows:

1. Equipment used or to be used in the performance of Work shall be specifically described by the manufacturer, model number and date of manufacture and be of suitable size and capacity required for the work to be performed.
2. Equipment, excluding hand tools which are defined as tools and equipment having a new purchase price of less than ONE THOUSAND DOLLARS, and which will be used exclusively and directly on the Work. For the purposes of computing the Contractor's cost for self-owned equipment, the rate used for periods of under five days shall be the monthly

rate set forth for the item of equipment in the Equipment Watch® "Rental Rate Blue Book" published by Penton Media (800 669-3282) divided by 22 days to establish a daily rate and divided again by eight hours to establish an hourly rate. The rate used for periods of 5 days or more shall be 45% of the published monthly rate. In the event the "Rental Rate Blue Book" does not list the item of equipment used, the applicable rate shall be determined in the same manner as set forth above except that the monthly rate used shall be that set forth in "The AED Green Book" published by Penton Media (800 669-3282). In the event that a rate is not established in the "Rental Rate Blue Book" or "The AED Green Book" for a particular piece of equipment, the Contracting Officer shall establish a rate for ownership costs and operating costs for that piece of equipment that is consistent with its cost and expected life. Self-owned equipment is defined to include equipment rented from controlled or affiliated companies.

3. Rented equipment will be paid for at the actual rental cost. Equipment rented for the Work used in the performance of extra work will be reimbursed for operating costs only.
4. For the purposes of the performance of extra or additional work, when, in the opinion of the Contractor, and as approved in writing by the Director's Representative, suitable equipment is not available on the Site, the moving of said equipment to and from the Site will be paid for at actual cost.
5. Notwithstanding any other provision, if the State should determine that the nature or size of the equipment used by the Contractor in connection with the performance of Work is larger or more elaborate, as the case may be, than the size or nature of the minimum equipment determined by the State to be suitable for the performance of Work, the cost of equipment used in calculating the costs of extra work or delay damages will not be based upon the equipment used by the Contractor but instead will be based on the smallest or least elaborate equipment determined by the State to have been suitable for the performance of the Work. In no event shall the amount paid to the Contractor as the allowance for the use of self-owned construction equipment exceed the lower of the actual cost of such equipment or the depreciated value of such equipment as carried on the Contractor or subcontractors' books.
6. The Contractor shall be reimbursed for its operating costs for self-owned equipment based on actual cost data. Operating costs shall include fuel, lubricants, other operating expendables, and preventive and field maintenance. Operating costs do not include the operator's wages. In the event, after documented and demonstrated due diligence, actual operating costs are not ascertainable, then the Contractor will be compensated utilizing 100 percent of the operating costs set forth in the "Rental Rate Blue Book" and the Contractor shall be reimbursed the product of the number of hours of actual use multiplied by the operating cost per hour.
7. The maximum amount of reimbursement for the ownership costs of self-owned equipment is limited to the original purchase price of the equipment as listed in the "Green Guide for Construction Equipment" published by Penton Media (800) 669-3282. In the specific event when the ownership reimbursement is limited by the original purchase price, the Contractor shall, nevertheless, be reimbursed for the operating cost per hour for each hour of actual use.

F. Insurance and Bonds:

1. The additional cost of all required Bonds and Liability and Builder's Risk Insurance Premium required by this Contract, arising from the additional cost of performing extra work shall be paid by a change order or field order to be issued upon physical completion

of the Work and upon the submission of proof of payment of such additional premiums assessed by the respective insurance companies for such additional cost of the extra work.

2. Should the additional work require an additional insurance policy not initially required or anticipated in the execution of the contract, whether required of the Contractor or a subcontract between the Contractor and a subcontractor actually performing extra work, will be reimbursed based on actual cost.

G. Unless otherwise specifically provided for in an order on contract or field order, the compensation specified therein for extra work includes full payment for both the extra work covered thereby and for any damage or expense caused the Contractor by any delays to other work to be done under the Contract resulting from or on account of said extra work, and the Contractor waives all rights to any other compensation for said extra work, damage or expense.

H. In computing the value of an order on contract or field order which involves additions and deletions of work and the cost of the added work exceeds the cost of the deleted work, overhead and profit shall be computed on the amount by which the actual cost of additional labor and material exceeds the actual cost of the deleted labor and material, except no additional overhead and profit shall be allowed on the value of any order on contract or field order determined by the method provided in Subparagraphs 1.01 A. 1.b. or 1.01 A. 3.

I. In computing the value of an order on contract or field order which involves additions and deletions of work and the cost of the deleted work exceeds the cost of the added work, the Contractor will be allowed to retain the overhead and profit on the amount by which the cost of the deleted work exceeds the cost of the added work, except that no overhead and profit shall be retained on the cost of work determined by the method provided in Subparagraphs 1.01 A. 1.b. or 1.01 A. 3.

J. Subject to the provisions of Article 17A of the General Conditions, the following elements of damage, and only the following elements, as determined by the Contracting Officer, will be recoverable by the Contractor as "delay damages" provided that they are actual, reasonable and necessary:

1. Documented additional or escalated job site labor expenses.
2. Documented additional or escalated costs for materials.
3. Documented additional or escalated equipment costs less appropriate credits, as such are determined in accordance with this Section.
4. Documented costs of extended job-site overhead (including job superintendent, office engineer and clerical staff, but not including working foremen).
5. An additional 15 percent of the total of the above items in Subparagraphs 1.01 J. 1., 2., 3. and 4. for home office overhead and profit thereon.
6. Documented additional or escalated insurance and bond costs.
7. When the work is performed by a subcontractor, the Contractor shall be paid the actual, reasonable and necessary cost of such subcontracted work as outlined Subparagraphs 1.01 J. 1. through 4., including the subcontractor's main office overhead and profit of 15 percent. The Contractor shall also be allowed an additional 5 percent administrative fee for processing.
8. The phrases "additional expenses", "escalated expenses", "additional costs" and "escalated costs" shall include expenses and costs above or below those normally incurred in the performance of the work, less any appropriate credit, and/or attributable, with appropriate

credits, to the performance of work or portions of work in a different time period than that which was indicated on the approved progress schedule.

K. The parties agree that, with regard to delay damages, the State will have no liability for the following items and the Contractor further agrees it shall make no claim for the following items:

1. Profit, in excess of that provided for above.
2. Loss of anticipated or unanticipated profit.
3. Labor inefficiencies and loss of productivity.
4. Home office overhead in excess of that provided for above.
5. Consequential damages, including but not limited to interest on monies in dispute, including interest which is paid on such monies, loss of bonding capacity, bidding opportunities, or interest on retainage or investment, or any resultant insolvency.
6. Indirect costs or expenses of any nature.
7. Direct or indirect costs attributable to performance of work where the Contractor, because of situations or conditions within its control, has not progressed in a manner satisfactory to the Executive Director.
8. Attorneys' fees or claims preparation expenses.

L. Remedies Exclusive: With respect to extra costs and delay damages, the parties agree that the State shall have no liability to the Contractor for expenses, costs, or items of damage other than those which are specifically identified as payable above. In the event any legal action is instituted against the State by the Contractor on account of any extra work or for additional compensation, whether on account of delay, acceleration, breach of contract, or otherwise, the Contractor agrees that the State's liability will be limited to those items which are specifically identified as compensable above. The Contractor further agrees to make no claim for expenses other than those which are specifically identified as compensable above.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012200

SECTION 013000.01 - ADMINISTRATIVE REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED REQUIREMENTS SPECIFIED ELSEWHERE

A. Other requirements pertaining to payments are included in the General Conditions and in the various sections of the Specifications.

B. Cost Computations: Section 012200.

C. Submittals: Section 013300.

1.2 WAIVER OF CERTAIN SUBMITTAL REQUIREMENTS

A. The Electronic Contractor Payments (ECP) program facilitates electronic submission of payment applications and related documents and information via a secure web-based portal. This portal is hereinafter referred to as the "Vendor Interface". Hardcopy (paper) submission of the following forms is waived, and the information required by these forms shall be submitted via the Vendor Interface:

1. BDC 169 (Contractor's Application for Payment form).
2. BDC 187 (Detailed Estimate form).
3. BDC 329 (Contractor's List of Subcontractors–Suppliers).

1.3 SCHEDULES AND RECORDS

A. Submit the following information not later than 15 days after approval of the Contract unless the Contractor or the Director determines an earlier submission is required to properly schedule or progress the Work.

1. CONTRACTOR'S LIST OF SUBCONTRACTORS – SUPPLIERS: An affirmative review of the subcontractor's responsibility will be conducted. Any subcontractor disapprovals resulting from negative information derived from the State's review will result in written notice (by letter or e-mail) to the Contractor. A responsibility meeting may result from these actions. The Contractor will defer to the provisions of Article 6, General Conditions, regarding its responsibility to prosecute the work.

a. Submit the CONTRACTOR'S LIST OF SUBCONTRACTORS – SUPPLIERS information using the required electronic entry process via the Vendor Interface.
b. Indicate the items of Work proposed to be accomplished by subcontractors, the name and address of each proposed subcontractor, the dollar value of the subcontract, and Minority and Women-Owned Business Enterprise (MWBE) information.

1) Attach a properly completed and executed NEW YORK STATE VENDOR RESPONSIBILITY QUESTIONNAIRE – FOR PROFIT CONSTRUCTION

(CCA-2) and forward to the Vendor Responsibility Unit for each subcontractor whose subcontract is valued at $100,000.00 or more unless requested otherwise by the Contracting Officer and/or the Director's Representative.

2) As an alternative to submitting a paper version of the form, subcontractors may opt to submit the CCA-2 on-line via the New York State VendRep System. Information on this system and the New York State vendor responsibility requirements is available at: http://www.osc.state.ny.us/vendrep/index.htm.

c. Indicate the names and addresses of proposed suppliers, the dollar value of the supplies, and MWBE information.

d. Failure in providing this information may result in payments being withheld and referral to the Contracting Officer for a responsibility determination.

B. If after initial approval, circumstances require a change in a subcontractor or supplier or require additional subcontractors or suppliers to be used, use the Vendor Interface to submit a revised BDC 329 form that reflects the changes or additions.

1.4 DETAILED ESTIMATE

A. Before making the first requisition for a progress payment, prepare a detailed estimate of quantities and prices for materials, labor and other items required for the Work, which shall aggregate the contract sum.

1. Submit the DETAILED ESTIMATE information using the required electronic entry process via the Vendor Interface.

B. The detailed estimate shall be supported by such evidence, including certified copies of subcontracts, as the Director may require.

C. The detailed estimate must be approved by the Director who may revise it as, in their reasonable judgment, is necessary to make the various items conform to their true values.

1. The value of each requisition for payment shall be based on the approved detailed estimate.

D. The Contractor shall bill any item of work listed as "Lump Sum" to 100%, no partial percentages will be allowed.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013000.01

SECTION 013113 - PROJECT PLANNING AND SCHEDULING

PART 1 - GENERAL

1.1 RELATED REQUIREMENTS AND INFORMATION SPECIFIED ELSEWHERE

A. Summary of the Work: Section 011000.

B. Administrative Requirements: Section 013000.

C. Project Meetings: Section 013119.

1.2 SUMMARY

A. Section includes administrative and procedural requirements to plan, schedule, and document the progress of the Project, work in place, and predict and prevent delays to established activities and milestones during performance of the Work.

1.3 DEFINITIONS

A. Activity: A task or grouping of tasks containing an anticipated start-date and corresponding duration in work days, anticipated labor resources, person responsible for the work, restricted work period, contract reference document, sequence of work, and budgeted cost (if required) comprising a generalized portion of the Work, that can be identified and measured for planning, coordinating, monitoring, and controlling the project.

B. Activity Duration: Time needed for the represented work in work days. No duration in any baseline or recovery schedule shall be longer than one (1) reporting period as defined in Section 013119, except for submittal items. All procurement and work activities must be provided in sufficient detail to meet this duration requirement.

C. Baseline Agreement: The agreement document for Section 013113 which will contain the baseline schedule report.

D. Baseline Project Schedule: The schedule derived from the Contractors' Project Work Plan activities and their prescribed durations, predecessor activities, etc., recognizing the completion of the Work of the Project Work Plan in accordance with the Contract duration. The Baseline Project Schedule will remain unaltered as a tool to measure progress outlined and anticipated during the Initial Schedule Meetings and from the agreed-upon Baseline Project Schedule. The Project Team will agree to the resulting schedule by completing the Baseline Agreement within the Project Work Plan software. OGS Scheduling will maintain the agreed-upon Baseline Project Schedule as the assigned project baseline schedule.

E. Calendar: The calendar utilized for each activity, set according to the direction of OGS Scheduling to accurately reflect anticipated State and Federal holidays. Calendars reflecting

additional shifts or non-traditional work hours must be reviewed with the Director's Representative and approved by OGS Scheduling and prior to use in the schedule.

F. Constraints: Constraints are a function which can manipulate or hold specific dates. Constraints are used by OGS Scheduling in specific instances during the baseline process to hold dates dictated by the terms of the Contract or assigned to submittal & procurement items in the Project Work Plan. Constraints are not allowed to be used/entered by Contractors on any activities except for mobilization items.

G. Data Date: The progress point or "status date" for activities/tasks in the project. Project status is up-to-date as of the Data Date. OGS Scheduling will specify the Data Date for each Project Update Reporting Period.

H. Float: The measure of latitude in starting and/or completing an activity without impeding the successful realization of Project Milestones. It is an expiring Project resource that is jointly owned, not for the exclusive use or benefit of either the State or the Contractors. Float is available as needed to meet scheduled milestones and Project completion. Recognizing float within an activity, or chain of activities, does not permit the Contractors to disrupt progress or to delay completion of an activity.

I. Milestone Activity: A significant start or finish to Work on a given set of activities on the Project, defined by both the Director's Representative and the Contractors. The Project Team will identify milestones, activities, or summary activities for incorporation into the Baseline or Project Schedule to assist in planning, scheduling, and coordinating the Project. This may include major milestones or phases required by the Contract Documents to be utilized by the Contractors and Project Team in developing the Baseline Project Schedule.

J. OGS Project Work Plan System (OGS PWPS): The collaborative online system provided by OGS for Contractors to establish their Project Work Plan activities, duration, prerequisites, resources and budgeted cost (if required) for Work of the Project. All work is entered into the OGS PWPS by the Contractor(s).

1. Importing of any information is not allowed.
2. Time lags are not allowed to be scheduled between activities.

K. OGS Scheduling: The department responsible for assisting and training the Project Team, reviewing, reporting, and interpreting the Contractor Project Work Plan and related information.

L. Preliminary Project Schedule: This schedule is a summary outline of the Contractor's anticipated Project Work Plan for the sequence of work of this Contract through Substantial Completion as noted in the Summary of Work (Section 011000). The activities are developed using anticipated dates and are coordinated among the Contractor(s). The resulting Schedule outlines and aligns the sequence of work for the individual Contract and coordinates the Contracts that are part of a multiple trade Project. The Project Work Plan needs to address sequencing of the work, long lead items, and impact of weather and restricted work periods as noted in Section 002219. The Project Team will agree to the resulting schedule by completing the Baseline Agreement within the Project Work Plan software.

M. Project: Work to be performed as part of one or more Contracts.

N. Project Team: The Designated Representatives acting on behalf of the State and/or Contractors to successfully plan, schedule, and coordinate the Work of the Project.

O. Project Update Reporting Period (Project Schedule Updates): A regular reporting period as stipulated for this Project in Section 013119, that is concluded by a Project Update Meeting for review, evaluation, and adjustments to the Project Work Plan and Activity progress.

P. Project Work Plan: A comprehensive list of Contractor tasks, including prerequisite activities, durations, labor resources, budgeted costs (if required), etc. used to develop the Project Schedule as entered by the Contractor's Supervision staff in the OGS PWPS.

Q. Recovery Project Schedule: Revised Project Work Plan developed from recovery options presented by the Contractor to the Director's Representative when Project Update Reporting indicates the Work is 15 or more work days behind the current Substantial Completion dates of the agreed-to Baseline Project Schedule. The Contractor will update their Project Work Plan accordingly for the revision. The Project Team will agree to the resulting recovery project schedule by completing the Baseline Agreement within the Project Work Plan software. OGS Scheduling will maintain the Baseline Agreement Recovery Project Schedule as the assigned Baseline Project Schedule.

1. The Recovery Project Schedule will only be reviewed by OGS when it is entered in the OGS PWPS

R. Resource: Any labor (workers), material, or equipment, shared or exclusive, required for the completion of the Work or an Activity, for which an associated cost is recognized.

S. Schedule: A comprehensive plan of necessary procedural tasks, including task sequencing, projected start and finish dates, and resource allocation required to successfully complete the Work by the Project completion date. The dates in the Schedule are the result of the sequence, duration, and requirements from the Project Work Plan.

PART 2 - PRODUCTS

2.1 SCHEDULE SOFTWARE

A. The Project Work Plan software (Oracle Primavera) is provided by OGS through the OGS PWPS for use on this OGS contract only.

B. Contractors are required to have Internet access to utilize the OGS PWPS for all parts of this section.

C. Meetings will be held in accordance with Section 013119 and will be conducted via WebEx™ or an equivalent online method provided by OGS.

D. OGS will provide training for access and use of the OGS PWPS. Additional support is available by OGS Scheduling as requested.

PART 3 - EXECUTION

3.1 PROJECT AWARD

A. OGS Scheduling will establish one account for each Contractor.

B. The Initial Schedule and Training Meeting is coordinated by the Director's Representative and Project Team. Prior to the meeting all Contractor accounts need to be set up by OGS Scheduling.

3.2 INITIAL SCHEDULE MEETING – (PERIOD DEFINED BY SECTION 013119)

A. The meeting is mandatory for the members of the Project Team and will be conducted by OGS Scheduling for the purpose of defining the intent of the specification and reporting structure of the Project. The mutual agreements reached at this and subsequent meetings form the basis for the Baseline and other Project Schedule(s), and will be used for coordinating, scheduling, and monitoring the Work of all related contracts.

B. This meeting also includes training for the Project Team using the OGS PWPS. Each session will be one hour (total of two hours) via WebEx™ or an equivalent online method provided by OGS.

1. SESSION 1 - Preliminary Project Schedule & Initial Training
2. SESSION 2 - Baseline Project Schedule Training

3.3 PRELIMINARY PROJECT SCHEDULE – (PERIOD DEFINED BY SECTION 011000, if specified)

A. In the OGS PWPS, the Contractor will develop their Project Work Plan activities and provide information relating to activity naming, anticipated work dates, resources, and budgeted cost (if required) on the OGS PWPS. The Project Team will establish a focused work breakdown structure (WBS). The activities are developed using anticipated dates and are coordinated among the Contractor(s).

B. Activities are to be appropriately placed within the OGS PWPS. Activity durations are only limited by the requirements of coordinating the work of the Preliminary Project Schedule by the Project Team. For the purposes of coordinating this schedule, relationships (predecessors and successors) are not required between the activities.

C. The Preliminary Project Schedule must be agreed to by the Project Team. Each Contractor and the Director's Representative shall agree to it by completing the Baseline Agreement within the Project Work Plan Software (sample agreement included at the end of Section 013113) .

3.4 BASELINE PROJECT SCHEDULE – (45 DAYS AFTER AWARD)

A. The Contractor(s) shall develop and enter their Project Work Plan activities which adequately represent their scope of Work of the Contract and the required coordination efforts for the Project. This includes, but is not limited to, sequence requirements, identification of logical connections to other work critical to Substantial Completion, accounting for critical submittals or submissions,

the fabrication and delivery of long-lead materials, products, specialized equipment or services, and the recognition of critical testing, inspection, or commissioning durations for coordination and tracking.

B. Each activity will identify the Contractor's anticipated duration for the activity defined in workdays, resources, and budgeted cost (if required) of the activity. The Contractor is responsible to provide the mandatory requirements outlined by OGS and the online OGS PWPS layout within the project structure provided by OGS. Revisions to the project structure must be agreed upon by the Project Team.

C. Activity durations cannot exceed the time frame in work days of the Project Reporting Period as defined in Section 013119.

D. The Contractors will identify each activity with a unique Activity Name that clearly communicates the scope of the work item to the rest of the Project Team. No Activity Name or Activity ID will be altered without approval of the Director's Representative and OGS Scheduling after the Baseline Project Schedule has been agreed to by the Director's Representative.

E. The Baseline Project Schedule must be agreed to by the Project Team. Each Contractor and the Director's Representative shall agree to it by completing the Baseline Agreement within the Project Work Plan software (sample agreement included at the end of Section 013113).

3.5 PROJECT SCHEDULE UPDATES (PERIOD DEFINED BY SECTION 013119)

A. Project Schedule meetings will be led by the Director's Representative and held to review Contractor updates to the actual starts, actual finishes, and remaining duration of in-progress activities, and consider logic changes, predecessor alterations, duration amendments, time impact events, and scope changes, for the purpose of determining the status of construction progress for the updated Project Schedule. At each meeting the Project Team will:

1. Agree to the completed Activity dates.
2. Coordinate and agree to the next 6-week Project Work Plan.
3. Evaluate and acknowledge any impact to the Contractor's ability to execute the Project Schedule according to the Baseline Project Schedule.

B. During the progress of Work on the Project, the Contractors are required to document actual start, actual finish, and remaining duration on a daily basis. Information will be posted by the Contractor to the OGS PWPS as defined during the Initial Schedule Meeting.

C. Contractors are required to update the status of all their activities two (2) days prior to the Project Schedule Meeting. The Contractors will notify the Director's Representative and OGS Scheduling when their update information for all activities is complete.

1. Any variation of 5 days (+/-) in the start or finish date for each activity must be explained and posted to each activity.
2. All necessary initiated documents such as Request for Information (RFI), Information Bulletins (IB), Field Orders (FO), Change Orders (CO), and Notice of Claim (NOC) must be incorporated by the Contractor into the Contractor's Work Plan.

3. Any Contractor failing to progress their Work as outlined in the updated Project Work Plan will be informed of their deficiencies and, if required, be requested to provide a recovery option.

D. Performing Work out of sequence with the Project Schedule is not permitted unless written approval is obtained from the Director's Representative prior to commencement.

3.6 RECOVERY PROJECT SCHEDULE

A. When the Project Schedule completion date is projected to be greater than the agreed-to Baseline Project Schedule's Substantial Completion date by 15 or more work days, the Contractor(s) will revise the existing Project Work Plan as necessary towards meeting the specified completion date within 10 calendar days after the Project Schedule update meeting.

B. Contractor recovery options may include, but are not limited to, allocating additional resources to reduce activity duration or modify activity sequencing.

C. Alterations to the Project Work Plan activities for a Recovery Work Plan will require the approval of the Contractor(s) and the Director's Representative. Agreed-to alterations to the Project Work Plan activities for a Recovery Work Plan will constitute the updated Project Schedule.

D. The updated Project Schedule must be agreed to by the Project Team. Each Contractor and the Director's Representative shall agree to it by completing the Baseline Agreement within the Project Work Plan Software (sample agreement included at the end of Section 013113).

E. The previous Baseline Project Schedule will be retained. The new agreed-upon Baseline Project Schedule will be used to measure progress moving forward.

3.7 SCHEDULE CLOSEOUT (AS-BUILT SCHEDULE)

A. A schedule meeting must occur to update the project schedule with the actual progress dates and to confirm that all activities are complete for Substantial Completion.

B. The Director's Representative will determine if any of the original Substantial Completion activities need to be tracked for Physical Completion in the project schedule.

3.8 TIME IMPACT AND TIME IMPACT ANALYSIS (TIA)

A. The Contractor(s) will represent the impact relative to the assigned Baseline Project Schedule in the OGS PWPS. The Contractor will incorporate the impact of any change in their Work Plan per the current OGS PWPS requirements for impacts. The requirements include but are not limited to:

1. A day-for-day tracking of the impact to illustrate the sequence of the impact from the initiating event.
2. All information required to create an Activity and the associated codes for the impact in the OGS PWPS as defined previously.

3. Modification of existing activities so that the name of each associated task enhances the reader's understanding of the impact. Modification of the associated (TIA) codes for the change in the OGS PWPS.
4. For the addition of any new activities, an explanation of how the modified scope impacts the agreed-to Baseline Project Schedule.

B. Contractors and the Project Team will use the most current Project Work Plan update to prepare the Time Impact representation.

C. If Project Work Plans have not been updated in accordance with this specification, an update by the Contractor must be generated which includes an accurate realization of the Work performed and progressed up to the Time Impact event. Failure to maintain Project Work Plan updates in accordance with this or related specifications will not absolve the Contractors of the responsibility to identify Time Impact as defined by, but not limited to, Specification Section 013113 or the General Conditions.

D. OGS Scheduling will assist the Contractor with this process as requested.

E. A Request for Time Extension will require Time Impact recognition within the OGS PWPS and Schedule.

F. Time Impact events will be reviewed for accuracy and are to be updated in accordance with relevant new information regarding time for resolution and impact to the remaining work on the Project.

G. All impacts (sequence, duration, and scope) must be agreed to by the Project Team.

3.9 SUBSTANTIAL COMPLETION DATE CHANGES

A. If the Substantial Completion date of the project is modified by an Order on Contract in accordance with the General Conditions, the Project Team will agree to a new Baseline Project Schedule within 10 calendar days after the approval of the Order on Contract.

1. The previous Baseline Project Schedule will be retained. The new agreed-upon Baseline Project Schedule will be used to measure progress moving forward.
2. The new Baseline Agreement must be agreed to by the Project Team. Each Contractor and the Director's Representative shall agree to it by completing the Baseline Agreement within the Project Work Plan Software (sample agreement included at the end of Section 013113).

SAMPLE BASELINE AGREEMENT

Baseline Agreement

NEW YORK STATE OF OPPORTUNITY. Office of General Services Design & Construction

Project:

It is agreed that the referenced Project Schedule defined by the following reports has been reviewed and is accepted for use in coordinating, scheduling, and monitoring the work of all related contracts

By acknowledging within the Project Work Plan software, OGS does not waive the terms and conditions set forth in the Contract Documents. In accordance with the General Conditions (Document 007213) any change in the Contract sum or time of completion requires an Order on Contract.

Refer to the following report for the specific dates.

Contract	Representative	Activity Name	Date

END OF SECTION 013113

SECTION 013119 - PROJECT MEETINGS

PART 1 - GENERAL

1.1 INITIAL JOB MEETING

A. The Director's Representative will notify all parties concerned of the time and place of the initial job meeting. The meeting will be conducted by the Director's Representative. The agenda will be based on the Format for Initial Job Meeting. All items on the format, as they apply, will be discussed.

1. A copy of the Facility's current Visitor Identification Policy will be distributed.

1.2 PROJECT SCHEDULE MEETINGS

A. The Initial Schedule Meeting will be held within 15 days of Project award. The Director's Representative will notify all members of the Project Team of the time and place of the meeting. The meeting will be conducted by the Director's Representative and OGS Scheduling via WebEx™ or an equivalent online method for the following purposes:

1. Define the intent of the specification.
2. Review the reporting structure of the Project.
3. Provide training to the Project Team.

B. The Director's Representative will notify all members of the Project Team of any Schedule development/coordination meetings conducted by the Director's Representative and OGS Scheduling via WebEx™ or an equivalent online method.

C. The Project will have monthly project update reporting periods. The update meetings will be conducted by the Director's Representative and OGS Scheduling via WebEx™ or an equivalent online method for the following purposes:

1. Agree to the completed Activity dates.
2. Coordinate and approve the next 6-week Project Work Plan.
3. Evaluate and acknowledge any impact to the Contractor's ability to execute the Project Schedule according to the approved Baseline Project Schedule.

1.3 BI WEEKLY JOB MEETINGS

A. Unless otherwise directed, job meetings will be held bi weekly, at a time and place agreed upon by the Director's Representative, the Contractor, and the Facility Representative. Other interested parties may attend when needed, e.g., subcontractors and representatives from suppliers, public utilities, and local government. The meetings will be conducted by the Director's Representative for the following purposes:

1. Review job progress, quality of Work, and approval and delivery of materials.

2. Identify and resolve problems which impede planned progress.
3. Coordinate the efforts of all concerned so that the project progresses on schedule to on-time completion.
4. Maintain sound working relationships between the Contractors and the Director's Representative, and a mutual understanding of the project requirements.
5. Maintain sound working procedures.
6. Review LEED documentation and compliance with anticipated goals.

1.4 PRE-INSTALLATION MEETINGS

A. Pre-installation meetings will be held to review the specifications, Project Schedule, drawings, and approved submittals in preparation for start of a particular activity.

B. The meetings shall be attended by the Director's Representative, a Design Representative, and the Contractor's Representative, including installer and representatives of manufacturers & fabricators involved in or affected by the installation and its coordination with other materials/trades.

C. The Director's Representative shall schedule the meetings prior to the start of the work. The goal of these meetings is to ensure the quality of construction and to maintain the schedule.

1.5 ATTENDANCE

A. A Contractor's Representative shall be required to attend all meetings scheduled by the Director's Representative, as set forth above.

B. If the Contractor's Representative fails to attend two scheduled meetings without prior approval, the Contractor will be directed to replace the current Contractor's Representative. Further incidents of non-attendance by the Contractor's Representative will form the basis for review of the Contractor's responsible vendor status.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013119

SECTION 013300.0 - SUBMITTALS

PART 1 - GENERAL

1.1 RELATED REQUIREMENTS SPECIFIED ELSEWHERE

A. Other requirements pertaining to submittals are included in the General Conditions and in the various sections of the Specifications.

B. Summary of the Work: Section 011000.

C. Administrative Requirements: Section 013000.

D. Contract Closeout Submittals: Section 017716.

1.2 DEFINITIONS

A. Deviation: Changes in products, materials, equipment and methods of construction from those required by the Contract Documents and proposed by the Contractor.

B. Acceptable Manufacturer, Company or Product: A manufacturer, company or product capable of achieving the requirements established in the Contract Documents and demonstrating compliance.

C. Portable Document Format (PDF): An open standard file format used for representing documents in a device-independent and display resolution-independent fixed layout document format.

D. Environmental Product Declaration (EPD): a third-party verified (also known as “type III”) product declarations that quantify environmental information the full life cycle of a product, from raw material supply, transport, manufacturing, installation, and operational use, through to waste processing and disposal at end-of-life, per ISO 14025.

1.3 DEVIATIONS FROM REQUIREMENTS OF THE CONTRACT DOCUMENTS

A. Deviations from the requirements of the Contract Documents will not be allowed unless a request for deviation is made in writing prior to or at the time of submission and the specific deviation is approved by the Director’s Representative subject to the requirements of Article 4 of the General Conditions. The request for deviation shall be made utilizing the CONTRACT DOCUMENT DEVIATION REQUEST FORM (Form BDC 49) accessible from the OGS Web Site.

1. The submission of a deviation shall be done in a timely manner according to the schedule of submittals to allow the Director sufficient time for review.

1.4 "OR EQUAL" TO BRAND NAME PRODUCTS

A. Whenever a product is specified by brand name, a comparable brand, equal to that named, may be submitted for approval subject to the requirements of Article 5 of the General Conditions.

1. The Contractor shall bear the burden of proving that the proposed product is equal to the specified product. The submission of an "or equal" shall be done in a timely manner to allow the Director sufficient time to review the proposed product.
2. Whenever a color or pattern is indicated by a specific manufacturer's name or number, the intent is to communicate the required color or pattern of the material. Other manufacturers' comparable colors or patterns may be submitted for approval as equal.

1.5 WAIVER OF CERTAIN SUBMITTAL REQUIREMENTS

A. Unless otherwise specified, the requirement to submit product data and samples for approval will be waived for products specified by brand name if the specifically named products are furnished for the Work. In such cases, submit required Product Data to the Director's Representative via Submittal Exchange® for information only.

1.6 ADMINISTRATIVE REQUIREMENTS

A. Participate in the OGS's hosted web-based collaboration service (Submittal Exchange® at www.submittalexchange.com) to transmit and track Contractor provided project related documents.

B. Identify submittals by project title and number. Include Contractor's name, date, and revision date. On shop drawings, product data and samples, also include the name of the supplier and subcontractor (if any), and applicable specification section number. Stamp each submittal and initial or sign the stamp to certify review and approval of submittal.

C. Assemble submittals in accordance with the requirements in the individual sections of the Specifications and as required by this section. It is the Contractor's responsibility to review and verify that all information required for each submittal is included in the submittal package. Errors or omissions found by the Contractor are to be corrected prior to the submission of the submittal package for approval. Incomplete submittal packages that have been submitted for review and approval will be returned.

1. It is the Contractor's responsibility to verify that portions of the submittal package to be provided by a subcontractor (or supplier) are complete, as well as portions of the submittal package being provided directly by the Contractor.
2. Do not combine the submittals of more than one specification section with submittals required by other specification sections unless specifically stated in the contract Specifications.

D. If a submittal is based on, or the result of, a change order or field order to the Contract Documents, include copies of the applicable change order or field order with the submittal.

E. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
2. Submit all submittal items required for each specification section concurrently unless instructions for partial submittals are required in a specific specification section requiring sequential submissions.
3. Submit action submittals and informational submittals required by the same specification section as separate packages under separate transmittals.
4. Coordinate transmittals of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.

    a. The Director's Representative reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

F. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on uploading the submittal to Submittal Exchange®. No extension of the project schedule will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.

1. Initial Review: Allow time for the initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. The Designer of Record will advise the Director's Representative when a submittal being processed must be delayed for coordination.
2. Resubmittal Review: Allow time for review of each resubmittal.
3. Sequential Review: Where sequential review of submittals by the project team is necessary for coordination, allow time for review.

G. The Construction Contractor shall employ or otherwise provide a full-time Submittal Coordinator for no less than 90 days after the Initial Job Meeting (IJM). The Submittal Coordinator is responsible to manage, coordinate and facilitate the submittal process on behalf of the Contractor. The Submittal Coordinator shall have regularly been engaged in construction administration for a minimum of 3 years and shall not be employed or otherwise engaged as the Project Manager or Superintendent for either the Work of this Contract or be employed in any role, full or part time, outside of this Contract.

1.7 SUBMITTALS

A. Submittal Coordinator Qualifications: Not later than 10 days after Award. Include resume and references, and other certification, licenses, or other requested information.

B. Schedule of Submittals acknowledgement: Provide written acknowledgement that the Schedule of Submittals has been received and reviewed with Critical Submittals identified and Contractor's Projected Dates (three dates inserted into each column) are entered for each specification item.

1.8 RE-EVALUATION FEE

~~A.~~ In accordance with Article 4.7 of the General Conditions, a re-evaluation processing fee will be levied against the Contractor for each re-evaluation of a Submittal or Submittal Package

submission that was returned for failure to comply with the submittal requirements relative to completeness, content or format.

1.9 ELECTRONIC SUBMITTALS

A. Submittal Exchange® is used to provide an on-line database and repository which shall be used to transmit and track project related documents. The intent for using this service is to expedite the construction process by reducing paperwork, improving information flow, and decreasing submittal review turnaround time.

1. Project submittals (shop drawing, product data and quality assurance submittals) shall be transmitted by the Contractor in PDF to Submittal Exchange®, where it will be tracked and stored for retrieval for review. After the submittal is reviewed it is uploaded back to Submittal Exchange® for action or use by the Contractor and Director's Representatives.
2. The service also tracks and stores documents related to the project such as RFI's (Request for Information), IB's (Information Bulletins), CAD Coordination, Minutes, Testing, Closeout, and SWPPP documents.

B. For each submittal, the Contractor shall review and apply electronic stamp certifying that the submittal complies with the requirements of the Contract Documents, including verification of manufacturer/product, dimensions and coordination of information with other parts of the work.

C. It is the Contractor's responsibility to provide submittals in PDF. The Contractor may use the following options:

1. Subcontractors and suppliers provide electronic submittals in PDF to the Contractor through Submittal Exchange®.
2. Subcontractors and suppliers provide paper submittals to the Contractor, who electronically scans and converts them to PDF.
3. Contract a Scanning Service, which will allow the Contractor and the Contractor's subcontractors and suppliers to provide paper submittals to the Scanning Service, which electronically scans and converts them to PDF. It will be the Contractor's responsibility to transmit the scanned submittals to Submittal Exchange®.

D. Image Quality:

1. Image resolution: The PDF files shall be created at a minimum resolution of 200 dots per inch utilizing the original document size. The Contractor will be responsible to increase the resolution of the scanned file or images being submitted as required to adequately present the information.
2. Image Color Rendition: When information represented requires color to convey the intent and compliance, provide full color PDF reproduction.

E. Internet Service and Equipment Requirements:

1. The Contractor will be required to have an Email address and Internet access at Contractor's main office.
2. Unless the Contractor will exclusively be using a Scanning Service to create PDF documents, the Contractor will be required to own a PDF reviewing, creating and editing software, such as Adobe Acrobat (www.adobe.com), Bluebeam PDF Revu®

(www.bluebeam.com), or other similar PDF reviewing, creating and editing software for applying electronic stamps and comments.

F. Training and Support:

1. Submittal web-based collaboration training and support shall be available, free of charge from Submittal Exchange®, for project participants using the submittals website.
2. Training schedule will be coordinated through the Director's Representative.

G. Paper prints (hardcopies) of reviewed submittals:

1. Record Copy: Each Contractor shall provide one paper copy of each submittal they are responsible for to the Director's Representative within 14 days of receipt of a released submittal (i.e. marked "Approved", "Approved As Noted", or other implied acceptance of a submittal), or meeting the requirements of Waiver Of Certain Submittal Requirements Article of this specification section.

   a. Exception: Paper copies are not required for a submittal that is disapproved or requiring resubmission.
   b. Paper copies shall be printed in a size format equal to the original document.
   c. Scaled Shop Drawings shall be printed to the scale noted on the drawings.
   d. The resolution of the printed copy shall be equal to that of the PDF file that it is being printed from.
   e. The Record Copy shall be used by the Director's Representative during the construction of the project and shall be retained as a turn-over item to the facility at the end of the project as required under Section 017716 Contract Closeout.

2. Use for Construction: Retain complete copies of submittals on project site. The Contractor shall not commence work for related activities until the appropriate submittals are approved and the corresponding record copies are delivered to the Director's Representative.
3. Distribution: The Contractor will furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Maintain transmittal forms indicating distribution of submittals.

1.10 SHOP DRAWINGS

A. Provide shop drawings in the format required by the Specifications. Show the information, dimensions, connections and other details necessary to insure that the shop drawings accurately interpret the Contract Documents. Show adjoining construction in such detail as required indicating proper connections. Where adjoining connected construction requires shop drawings or product data, submit such information for approval at the same time so that connections can be accurately checked.

B. Electronic copies of CAD Drawings of the Contract Drawings will be provided by the Director's Representative for Contractor's use in preparing submittals.

1. The Director's Representative will furnish one set of digital data drawing files of the Contract Drawings for use in preparing Shop Drawings.

a. The Director's Representative makes no representations as to the accuracy or completeness of digital data drawing files as they relate to the Contract Drawings.
b. Digital Drawing Software Program: The Contract Drawings are available in AutoCAD.
c. The following digital data files will be furnished for each appropriate discipline:

1) Floor Plans.
2) Reflected Ceiling Plans.
3) Site Plans

2. The Contractor will be required to sign a Use Agreement for Project Documents prior to release of digital data drawing files of the Contract Drawings.

C. Electronic copies of CAD Drawings of the Contract Drawings will not be provided by the Director's Representative for Contractor's use in preparing submittals.

D. Have shop drawings prepared by a qualified detailer. Shop drawings shall be neatly drawn and clearly legible. Machine duplicated copies of Contract Drawings will not be accepted as shop drawings.

1. Where shop drawings are indicated to be drawn to scale:

a. Use scale normally found on an "Architect" or "Engineer" scale.
b. Written Scale: Clearly label scales being used on each drawing and/or on each detail on the drawing.

1) Examples: 1/8" = 1'-0" 1" = 40'-0".

c. Graphic Scale: Adjacent to each Written Scale, provide a graphic scale delineating the scale being used. Graphic scale shall be divided into measuring units relating to the accuracy required for the drawing or details.
d. Clearly dimension key elements of the drawing or detail.

2. When the drawing sheet is printed full size, the minimum text size shall be 1/8" (3.2 mm) for hand drafting and 3/32" (2.5 mm) for CADD drawings.

E. Submit the shop drawings through Submittal Exchange®. The shop drawings will be reviewed and the review results will be posted on Submittal Exchange®. Contractor will receive email notice of completed review. If the review results in disposition of "DISAPPROVED" or "RETURNED FOR CORRECTION", promptly correct the deficiencies and resubmit the shop drawings meeting Contract requirements.

1.11 PRODUCT DATA

A. Provide product data in the format required by the Specifications. Modify product data by deleting information that is not applicable to the project or by marking the product data to identify pertinent products. Supplement standard information, if necessary, to provide additional information applicable to project.

B. Submit the product data through Submittal Exchange®. The product data will be reviewed and the review results will be posted on Submittal Exchange®. Contractor will receive email notice of completed review. If the review results in disposition of "DISAPPROVED" or "RETURNED FOR CORRECTION", promptly correct the deficiencies and resubmit the product data meeting Contract requirements.

C. Comply with applicable federal and State of New York Right-to-Know Law provisions. Provide Safety Data Sheets (SDS) documents for products that have SDS data prior to use on the project site.

1. Upload and maintain electronic SDS documents on the Submittal Exchange® SDS tab.
2. SDS tab is organized by prime contracts. To be readily identified, name products with SDS by specification section number and product name.
3. Supply and maintain one hard copy of the appropriate SDS on the project site and one hard copy with the Facility's Right-to-Know Information Officer.

1.12 ENVIRONMENTAL PRODUCT DECLARATION (EPD)

A. Provide EPDs for the specific material required by the Specifications, if available.

B. Manufacturer-provided EPDs must be Product Specific Type III (Third-Party Reviewed), in adherence with ISO 14025 Environmental labels and declarations, ISO 14044 Environmental management – Life cycle assessment, and ISO 21930 Core rules for environmental product declarations of construction products and services.

C. Include completed Environmental Product Declaration (EPD) Cover Form found on the OGS Web Site with the submission of each EPD.

D. A statement of the contractors' good faith effort to obtain the EPD shall be provided via Environmental Product Declaration (EPD) Waiver Form found on the OGS Web Site if EPD is not available.

E. Submit the product data through Submittal Exchange®. The EPD will be reviewed, and the review results will be posted on Submittal Exchange®. Contractor will receive email notice of completed review. If the review results in disposition of "DISAPPROVED" or "RETURNED FOR CORRECTION", promptly correct the deficiencies and resubmit the product data meeting Contract requirements.

1.13 QUALITY ASSURANCE

A. Provide quality assurance information in the format required by the Specifications, including supporting documentation as required.

B. Submit the quality assurance information through Submittal Exchange®. The quality assurance information will be reviewed and the review results will be posted on Submittal Exchange®. Contractor will receive email notice of completed review. If the review results in disposition of "DISAPPROVED" or "RETURNED FOR CORRECTION", promptly correct the deficiencies and resubmit the quality assurance information meeting Contract requirements.

1.14 SAMPLES

A. Submit 2 (unless a different number is specified) of each sample required by the Specifications.

B. Samples will become the property of the State when submitted and will not be incorporated in the Work unless specifically stated otherwise.

C. The electronic submittal process is not intended for color samples, color charts, or physical material samples.

D. Record transmittal of each sample required by the Specifications through Submittal Exchange®.

E. Consult with the Director's Representative for direction on where Samples will be sent for review.

F. The sample will be reviewed and the review results will be posted on Submittal Exchange®. Contractor will receive email notice of completed review.

1.15 REVIEW OF SUBMITTALS

A. Items submitted for review will be reviewed for compliance with the Contract Documents, based upon the information submitted. The items will be acted upon with the following dispositions:

1. Approved:

a. Where the submittal is marked "Approved", the work covered by the submittal may proceed provided it complies with the Contract Documents. Final acceptance will depend on that compliance.

2. Approved as Noted:

a. Where the submittal is marked "Approved as Noted", the work covered by the submittal may proceed provided it complies with the review comments noted on the submittal and the Contract Documents. Final acceptance will depend on that compliance.

3. Disapproved:

a. Where the submittal is marked "Disapproved", do not proceed with the work covered by the submittal, including purchasing, fabrication, delivery or other activity for the item submitted. Prepare a new submittal according to the review comments noted on the submittal and meeting the Contract Documents.

4. Returned for Correction:

a. Where the submittal is marked "Returned for Correction", do not proceed with the work covered by the submittal, including purchasing, fabrication, delivery or other activity for the item submitted. Revise or prepare a new submittal according to the review comments noted on the submittal and meeting the Contract Documents.

5. Acknowledged:

a. Where the submittal is marked “Acknowledged”, receipt of the submittal is acknowledged and has been recorded.

6. No Action:

a. Where the submittal is marked “No Action” or “No Action Taken”, no review was made of this item, see comments noted on submittal and take appropriate action.

7. Multi-Action:

a. Where the submittal is marked “Multi-Action”, separate dispositions were made for the items submitted, see the review comments for the disposition of each item submitted.

1.16 SCHEDULES AND RECORDS

A. Submit the following Schedules and Records information not later than 15 days after approval of the Contract unless the Contractor or the Director determines an earlier submission is required to properly schedule or progress the Work.

1. SCHEDULE OF SUBMITTALS (S.O.S.):

a. Follow the Instructions to the Contractor in the S.O.S (cover page of the Microsoft Excel form supplied by the State).
b. Confirm submittal items listed and indicate in the spaces following each item, the date the item will be submitted (Projected Transmittal Date).
c. Confirm critical submittals and long lead items identified by the Architect / Engineer. Identify and mark with “X” additional submittals deemed as critical or having long lead times. In addition to the date each item will be submitted, include the date approval is required (allow at least 3 weeks), and the date delivery of the material or equipment is necessary for timely completion of the Work in accordance with the Project Schedule.
d. Notify the Director’s Representative of modifications and/or additional submittals necessary for the project prior to requesting revisions with Submittal Exchange®.

2. SUBMITTALS WEBSITE LOG:

a. The submittal website log will be populated by Submittal Exchange® by means of the S.O.S.
b. Review the log and verify that all long lead items and critical submittals are properly indicated according to the latest version of the S.O.S. For each item to be submitted indicate the following:

1) In the “Date Expected” column insert the date the item will be submitted for review and approval (this is the same date as the S.O.S “Projected Transmittal Date”).
2) In the “Date Requested on Site” column insert the date the item will be delivered to the project site (this is the same date as the S.O.S “Projected Delivery Date”).

c. The submission date that is entered shall provide sufficient time for the item to be reviewed, ordered, delivered and installed for timely completion of the Work in accordance with the Project Schedule. The date entered for submittal of each item is the last day a deviation will be considered.

1.17 TRANSMITTALS

A. Submittal Transmittal (Form BDC 42) accessible from the OGS Web Site:

1. Furnish separate Form BDC 42 for each submitted item sent to Submittal Exchange® for review.

a. Contractor may utilize their own Transmittal Form (or Transmittal Letter) in lieu of utilizing the Form BDC 42, contingent on the Contractor's Transmittal Form includes all information and certifications required by Form BDC 42.

2. Clearly identify applicable specification section number of submitted item (product data, shop drawing, etc.) on the Form BDC 42.

B. All Contracts:

1. Transmit items designated in the Schedule of Submittals (and project Specifications) to the Submittal Exchange®.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013300.0

SECTION 014100.01 - REGULATORY REQUIREMENTS

PART 1 - GENERAL

1.1 COMPLIANCE

A. Comply with applicable regulatory requirements and various codes referenced in these specifications. Where conflicts exist between local, State, and/or Federal regulatory requirements, codes, or these specifications, advise the Director's Representative. The Director's Representative will assist in resolving the conflicts to the satisfaction of the regulatory agencies prior to commencing the Work.

1.2 UNIFORM CODE, ENERGY CODE, AND CONTRACTOR QUALIFICATIONS

A. All Work shall comply with OSHA (including site-specific safety plans required on all projects), and the New York State Uniform Fire Prevention and Building Code (the "Uniform Code"), which includes the publications incorporated by reference in Title 19 NYCRR Part 1219 through 1228:

1. 2020 Residential Code of New York State (the "Residential Code")
2. 2020 Building Code of New York State (the "Building Code")
3. 2020 Plumbing Code of New York State (the "Plumbing Code")
4. 2020 Mechanical Code of New York State (the "Mechanical Code")
5. 2020 Fuel Gas Code of New York State (the "Fuel Gas Code")
6. 2020 Fire Code of New York State (the "Fire Code")
7. 2020 Property Maintenance Code of New York State (the "Property Maintenance Code")
8. 2020 Existing Building Code of New York State (the "Existing Building Code")
9. All other standards referenced in 19 NYCRR Parts 1219 through 1228.

B. The contractor shall be aware of, and comply with, contractor requirements identified in the above-referenced codes and standards; for example, but not limited to:

1. OSHA (Occupational Safety and Health Administration).
2. 2020 Building Code Chapter 33 Safeguards During Construction.
3. 2020 Existing Building Code Chapter 15 Construction Safeguards.
4. 2020 Fire Code Chapter 33 Fire Safety During Construction and Demolition.
5. 2020 Fire Code Chapter 35 Welding and Other Hot Work (which governs safety during construction).

C. All Work shall comply with the 2020 Energy Conservation Construction Code of New York State ("Energy Code") promulgated pursuant to Article 11 of the New York State Energy Law. The Energy Code is contained in 19 NYCRR, Part 1240, and in the publications incorporated by reference in 19 NYCRR Part 1240. The publications incorporated by reference in 19 NYCRR Part 1240 include:

1. The publication entitled "2020 Energy Conservation Construction Code" published by International Code Council, Inc.

2. The publication entitled "ANSI / ASHRAE / IES Standard 90.1-2016, Energy Standard for Buildings Except Low-Rise Residential Buildings" published by American Society of Heating, Refrigeration and Air-Conditioning Engineers, Inc.
3. The other referenced standards mentioned and/or referred to in 19 NYCRR Part 1240.

D. Electrical Work: Conform to the requirements of the National Electrical Code (NEC), as referenced in the Uniform Code, unless otherwise shown or specified. The Director will be the sole judge of the interpretation of these rules and requirements.

1.3 STATE-REQUIRED PERMITS AND INSPECTIONS

A. No Work shall commence without a Construction Permit issued by the OGS Division of Codes and Construction Permitting. Contractors shall not file for and not pay for Construction Permits for Work located on New York State property.

B. New York Board of Fire Underwriters inspection or certificate is not required.

1.4 LISTINGS

A. Equipment and materials for which Underwriters' Laboratories, Inc. (UL) provides product listing service, shall be listed and bear the listing mark.

1. Alternately, any product listed and bearing the mark from one of the other Nationally Recognized Testing Laboratories (NRTL – as recognized by OSHA) shall be an acceptable alternative to being UL listed and marked if the listed product has been tested to the applicable standard.

1.5 UTILITIES

A. Underground Utilities:

1. USE SECTION 023313 IN THE PROJECT MANUAL IF THE LOCATION OF UNDERGROUND UTILITIES IS REQUIRED. NOTIFYING UDIG NY (FORMERLY KNOWN AS 'DIG SAFE NY') PRIOR TO THE PERFORMANCE OF ANY EXCAVATIONS IS REQUIRED BY LAW. Locate existing underground utilities prior to commencing excavation work. Conform to all requirements of NYCRR 16 Part 753, including the following:

a. Notify UDig NYat least 48 hours in advance, not counting the date of contact.

1) Statewide Phone Number: 811.
2) Website: https://udigny.org/

b. Refer to Project Manual Section 023313 "Underground Utility Locator Service" to locate all utilities on facility and/or private property.
c. Determine exact utility locations by hand-excavated test pits. Contractor will be responsible for the proper support and protection of all utilities to remain in service.

d. Contractor shall provide a representative to clearly mark areas of excavation in accordance with NYS Code Rule 753.
e. Submit copies of all UDig NY Tickets to the Director's Representative prior to commencement of any excavations.

B. Coordination with Electric Utility Company:

1. Comply with utility company requirements for new or modified electric service. If a meter is required to complete the Work, arrange installation with utility company. The utility company is National Grid.
2. Comply with the utility company requirements for inspecting new or modified electric service. Provide electrical inspection by an inspector approved by the utility. Submit all inspection documentation to the Director's Representative for utility approval prior to energizing the service. Should inspection results prove unsatisfactory, reinspect at no additional cost to the State. The utility company is National Grid.

C. Coordination with Gas Utility Company:

1. Comply with utility company's requirements for new or modified gas service. If a meter is required to complete the Work, arrange installation with the utility's Energy Services Department. The utility company is National Fuel Gas Company. The following web link may be applicable:

a. National Fuel Gas | Natural Gas Supplier/Distributor in NY and PA

D. Coordination with Municipality for Water Connection:

1. Comply with the municipal requirements for the connection of water lines to the municipal utility services. Obtain and pay for all necessary permits from municipal water department. Obtain authority to connect to their existing water mains. The municipal water department is Erie County Water Authority.

a. Make necessary connections to existing municipal water mains under supervision of water department's representative.
b. Connection Control Unit: Install Reduced Pressure Zone Devices (RPZDs) and meters to comply with municipal standards. Obtain meters per municipal requirements.

E. Coordination with Municipality for Sanitary Sewer Connection:

1. Comply with the municipal requirements for the connection of sanitary sewer lines to the municipal utility services. Obtain and pay for all necessary permits from municipal sewer department. Obtain authority to connect to their existing sanitary sewers. The municipal sewer department is Erie County Sewer District 2.

a. Make necessary connections to existing municipal sewer lines under the supervision of sewer department's representative.

F. Coordination with Telecommunications Organization:

1. Contact the NYS Office of Information Technology Services (ITS), Albany, NY and coordinate installation of IT equipment. Contact https://its.ny.gov/form/contact-its or (844) 891-1786.
2. Coordinate with facility to contact the existing internet service provider at the facility, to tie into the existing internet services on site.

1.6 FIRE ALARM AND SECURITY WORK

A. The Work to install, modify, repair, or service Fire Alarm Systems and/or Security Systems shall be performed in accordance with the requirements of Article 6-D (Business of Installing Security or Fire Alarm System) of the New York State General Business Law.

1. Fire Alarm Work: New York State Fire Alarm License is required for installation.

1.7 MATERIALS WITH CONTAMINATED SOIL

A. Comply with the NYS DEC requirement when handling contaminated soil.

B. Perform Work required to remove, disturb, or treatment of contaminated soil, in compliance with the Health and Safety Plan included in the manual

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 014100.01

SECTION 014216 - DEFINITIONS

PART 1 - GENERAL

1.1 DEFINITIONS SPECIFIED ELSEWHERE

A. Other definitions are included in Article 2 of the General Conditions and in various sections of the Specifications.

1.2 DEFINITIONS

A. The following terms shall have the meanings ascribed to them in this Section, wherever they appear in the Contract Documents.

1. Air Handling Unit: Equipment in which air is heated, cooled, humidified, dehumidified, filtered, deodorized, sterilized, etc., and is moved by mechanical means either within the equipment or externally through ductwork.
2. Cold Water Inlet: That part of distribution piping beginning with a connection to the service piping, and which contains the main shut-off valve, strainer, pressure regulators, gages and appurtenances required for control of the distribution water system for the building. The cold water inlet is part of the distribution system.
3. Company Field Advisor: An employee of the Company which lists and markets the primary components of the system under their name who is certified in writing by the Company to be technically qualified in design, installation, and servicing of the required products or an employee of an organization certified by the foregoing Company to be technically qualified in design, installation and servicing of the required products. Personnel involved solely in sales do not qualify.
4. Drains: Piping connections and valves used for purpose of (a) determining operating conditions of water columns, gage glasses, piping to feedwater heater and other regulators, and (b) piping connections and valves used for removal of contents or sludge and other forms of deposits from tanks, heaters, regulator bodies, and low points in piping systems.
5. Drainage System: Piping and appurtenances required to convey sewage, storm water, and liquid waste from plumbing fixtures, equipment and drains to a point of discharge outside the building.
6. Ductwork, Concealed: Ductwork built into construction and not accessible without removal of construction Work such as masonry, plaster or other finishing material, and ductwork installed in floors, furred spaces, suspended ceilings and behind removable panels.
7. Ductwork Exposed: Ductwork directly accessible by normal accesses without the removal of any construction Work or material.
8. Headroom: Minimum clearance between the floor and the underside of the point of lowest installed mechanical construction above. In case of stairways and walkways, the minimum clearance between the step or surface of the walkway and lowest installed mechanical construction above the stairway or the walkway.
9. Location, Dry: Location not normally subject to dampness or wetness.
10. Location, Damp: Location subject to moderate degree of moisture, including:

a. Partially protected locations under canopies, marquees, roofed open porches, and like locations.
b. Installations in exterior walls.
c. Interior locations such as unheated basements, unheated barns, and cold-storage areas.

11. Location, Wet: Location subject to saturation with water or other liquids, including:

a. Installations underground.
b. Locations exposed to the weather and unprotected.
c. Installations in concrete slabs on grade (with or without vapor barrier between slab and grade).
d. Installations under concrete slabs on grade.
e. Installations in concrete or masonry walls in contact with the earth (with or without membrane waterproofing between wall and earth).
f. Vehicle washing areas and like locations.

12. Mechanical: General term applicable to HVAC, Plumbing, Sprinkler, Laboratory Equipment, Food Service Equipment, Laundry Equipment, and Refrigeration.
13. Piping: This term includes pipe, tube and appurtenant fittings, flanges, valves, traps, hangers and supports.
14. Piping, Concealed: Piping built into construction and not accessible without removal of construction Work such as masonry, plaster or other finishing material and piping installed in floors, furred spaces, suspended ceilings, non-walk-in tunnels, conduits, behind removable panels and cabinet doors.
15. Piping, Exposed: Piping directly accessible by normal accesses without the removal of construction Work or material.
16. Piping, Distribution: Domestic water supply piping, starting with a connection to service piping, and continuing throughout the building to point of connection to equipment and fixture supply piping.
17. Piping, Service: Underground domestic water supply piping starting with a connection to a water main or supply as noted and continuing to and into a building and terminating with the first exposed fitting inside the building.
18. Piping, Tunnel: Piping installed in walk-in or non-walk-in tunnels or conduits up to first shut-off valve inside of a building.
19. Space, Finished: A space which has a finishing material applied to walls or ceilings such as paint, plaster, ceramic tile, enamel glazing, face brick, vinyl wall covering, etc. to provide a finished appearance or which will have such finishes applied under a related Contract.
20. Space, Unfinished: A space which does not meet the definition of a finished space.
21. Steam, High Pressure (HPS): Steam at pressure higher than 125 psig.
22. Steam, Medium Pressure (MPS): Steam at pressure higher than 15 psig, and not more than 125 psig.
23. Steam, Low Pressure (LPS): Steam at a pressure of 15 psig and below.
24. Water, Chilled: Water cooled by refrigeration.
25. Water, Cold: Water with a temperature between 33 degrees F. and 80 degrees F. and which is neither cooled nor heated mechanically.
26. Water, Domestic: Water for use in buildings, except water used in connection with space heating and space cooling.
27. Water, High Temperature: Water with a supply water temperature above 350 degrees F.

28. Water, Hot: Water with a temperature above 80 degrees F.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 014216

SECTION 015000 - CONSTRUCTION FACILITIES & TEMPORARY CONTROLS

PART 1 - GENERAL

1.1 DESCRIPTION

A. Provide the construction facilities and temporary controls necessary for the Work, unless otherwise indicated.

1. The construction facilities and temporary controls specified to be provided by a particular Contract shall be kept operational by that Contractor for the Work of all related Contracts at all times Work is being performed by a Contractor.
2. The construction facilities and temporary controls specified to be provided by a particular Contractor shall be installed as soon after award of the Contract as necessary to enable the Work of each Contract to proceed on schedule and maintained until completion of the Work of all related contracts unless otherwise directed in writing.
3. Any Contractor who requires additions to the construction facilities and temporary controls specified to be provided by another Contractor, shall provide and maintain them.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Construction Waste Management: Section 017419.

1.3 TEMPORARY LIGHT AND POWER

A. Electrical energy for temporary light and power will be made available without charge.

B. Extent of Temporary Wiring: Contractors may ascertain the extent of the temporary wiring provided under the Electrical Work Contract by examining the Electrical Drawings.

C. Electrical Work Contract:

1. Make necessary arrangements, through the Director's Representative, for temporary electrical service at location indicated.
2. Provide portable source of electricity for temporary light and power of adequate capacity to supply the needs of all contractors for the performance of their Work until the temporary electrical service can be utilized for temporary light and power.

3. . Supply temporary light and power from existing electric service available at the facility.
4. Provide wiring and other equipment within the building for temporary light and power.

a. Wiring for temporary light and single phase power shall, in general, consist of 3 wire, 120/208 volt feeders, with branch circuits of #12 conductors minimum.

1) Install branch circuits with suitable fluorescent fixtures or LED Fixtures for temporary lighting as required to maintain a minimum of 10 foot candles in

the work areas. Equip fixtures with guards. Fixtures installed in damp or wet locations shall be of the weatherproof type.

2) Install branch circuits with fused grounding type receptacle outlets for single phase power (for power tools, etc.).

a. If 3 phase power for machines and other heavy electrical loadsis required, provide separate source. .

1) Provide a fused sealed service entrance switch for corridor and stair lighting circuits. Locate switch adjacent to and connect to line side of temporary light and power service entrance switch. Stencil cover "CORRIDOR AND STAIR LIGHTING".

2) Provide lamps and fuses including replacements required.

D. All Contracts:

1. Any Contractor requiring additional lighting shall provide additional fluorescent fixtures or LED Fixtures, but in no case shall the load on any branch circuit or feeder exceed its rated capacity.
2. Install materials for temporary light and power in conformance with the National Electrical Code.
3. Materials for temporary light and power need not be new if they are in satisfactory operating condition.
4. Provide ground-fault protection for personnel (such as portable plug-in type ground-fault circuit-interrupters) on single phase 15 and 20 ampere receptacle outlets which are in use.
5. Receptacle outlets, portable cord connectors and attachment plugs shall have standard NEMA configurations.
6. As the progress of the Work allows, and as approved, completed portions of the permanent wiring and electrical service may be utilized for temporary light and power.

1.4 TEMPORARY WATER

A. Water will be made available for the Work without charge at source or sources directed within the limits of the existing supply and usage.

B. Construction Work Contract:

1. Make arrangements and pay for water for temporary service.
2. Provide and maintain a temporary water system, of such size and capacity as to adequately supply the needs of all contractors during performance of their Work.
3. Provide barrels at locations as required for the Work.

C. Plumbing Work Contract:

1. Make arrangements and pay for water for temporary service.
2. Provide and maintain a temporary water system, of such size and capacity as to adequately supply the needs of all contractors during performance of their Work.
3. The permanent water lines may be used for temporary water service if potable water is carried in the lines.

4. Hose Connections: Provide and maintain 3/4 inch hose connections and barrels with wastes
5. At each hose connection, provide and maintain a water-tight barrel or tank complete with overflow piping and waste piping to an approved point of discharge, and a metal drip pan under the barrel or tank so as to prevent water overflowing or spilling
6. Protect temporary lines against freezing.
7. Repair damages caused by installation of leaky, defective or broken piping, connections or other fittings.

D. All Contracts: Prevent waste of water.

1.5 TEMPORARY TOILETS

A. Construction work contract shall provide and maintain "portable toilets" at the

B. Construction Work Contract: Maintain assigned toilet rooms in a sanitary condition.

C. Construction Work Contract: Provide toilet facilities for Contractor's and subcontractors employees engaged on the Project, including employees of other contractors. Locate toilets where directed and maintain them in a sanitary condition.

NUMBER OF EMPLOYEES	MINIMUM NUMBER OF FACILITIES
20 or less	1 toilet
20 or more	1 toilet and 1 urinal per 40 employees
200 or more	1 toilet and 1 urinal per 50 employees

*Toilet/Urinal Combinations shall count as only one facility.

1. Where water and sewer connections are available, provide water closets, otherwise provide approved chemical or electric toilets.
2. Inside buildings, locate toilet facilities no more than 4 stories or 60 feet above or below, nor more than 500 feet travel on the same level from the work location of any person.
3. Locate toilet facilities no more than 1000 feet from any work location.

    a. Exception: Mobile crews having readily available transportation to nearby toilet facilities.

1.6 PROTECTION OF WORK AND EXISTING PROPERTY

A. Protect installed Work and existing property during performance of the Work.

B. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.

C. .

D. Prohibit traffic or storage upon waterproofed and roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.

E. Protect existing trees and plants during performance of the Work unless otherwise indicated. Box trees and plants within the grading limit lines. Do not deposit excavated materials or store building materials around trees or plants. Do not attach guy wires to trees.

F. Prohibit traffic from landscaped areas.

G. Cleaning tools of cementitious and other insoluble materials:

1. Do not wash tools in sinks or other sanitary drainage systems. Protect all drainage systems from debris that can clog or damage piping and fixtures.
2. Take all precautions necessary to prevent cementitious and other insoluble materials from flowing into floor drains.
3. Dispose of excess cementitious and other insoluble debris with the other rubbish.

1.7 BARRIERS AND ENCLOSURES

A. All Contracts: Provide barriers during performance of the Work to:

1. Prevent unauthorized entry to work areas.
2. Allow for State's occupancy of Site.
3. Protect existing facilities and adjacent properties from damage.
4. Protect vehicular and pedestrian traffic.

B. Construction Work Contract:

1. Temporary Partitions: Provide temporary partitions to form fire resistive barriers between work areas and areas occupied by State personnel. Construct the partitions of 3-5/8 inch width steel framing or 2 x 4 wood framing, with 5/8 inch thick Type X (ASTM C 36) gypsum board on both sides of partition. Secure the partitions in place without damaging existing construction. Seal joints on the State occupied side with joint tape and compound. Provide 1-3/4 inch thick solid core flush wood doors or 18 gage flush steel doors, and steel door frames. Equip doors with full mortise hinges and lockset. Furnish the Director's Representative with 2 keys for each lock.

2. Temporary Dust Barriers: Provide temporary dust barriers to prevent the spread of dust from the work areas. Construct the dust barriers of wood framing sheathed with 6 mil polyethylene film. Secure the dust barriers in place without damaging existing construction.

3. Scaffolding, Hoist, and Equipment Barriers: Provide temporary fence enclosures as required to prevent unauthorized persons from coming in contact with ground supported scaffolding, hoists, and equipment.

1.8 TEMPORARY FENCE ENCLOSURE

A. Construction Work Contract:

1. Provide temporary fence not less than 8 feet in height above grade.

2. Fabric: #9 gage galvanized steel, or equal gage aluminum, woven together into 2 inch diamond mesh, with both top and bottom edges having a twisted and barbed finish.
3. Posts, Rails, and Connections: Standard galvanized steel products of an approved manufacturer, of the size and types as required and approved. Provide top and bottom rails between all posts, secured with bolted connections.
4. Gates: Provide access gates for passage of employees and materials, complete with padlock. Fabricate gates with galvanized steel pipe perimeter covered with same fabric specified for fence. Furnish the Director's Representative with 2 keys per gate.
5. Provide each post and gate with "V" shaped extension arms and with 3 strands per side of 4 point heavy galvanized steel barbed wire.
6. Erection: Set posts 4 feet into the ground and not more than 10 feet apart. Install bottom rail not more than 2 inches above existing grade. Pull fabric taut and wire tightly to posts and rails at not more than 2 feet on center.
7. Maintain the temporary fence enclosure throughout the life of the Contract, or until directed to be removed. Replace all items or portions of fence enclosure damaged or destroyed.

1.9 SECURITY

A. Key Deposits: A $25 deposit will be required for each key issued by the Facility. Deposits will be refunded upon return of the keys.

B. Facility Key Regulations:

1. Sign Facility keys out and in on a daily basis unless otherwise directed.
2. Keep keys on person at all times while on the premises. Do not loan or give keys to other persons.
3. Do not remove keys from the premises without written permission from the Director's Representative.
4. Report lost, missing, or stolen keys immediately to the Facility Safety/Security Department. Assume responsibility for cost of necessary key and lock replacement as a result of lost, missing, or stolen keys.

C. Identification Cards:

A. Promptly relock doors and security screens located in access routes, storage areas, and work areas after use.

B. Restore, by the end of each work day, existing in place safety/security items such as doors, screens, alarm systems components, that required removal, replacement, or adjustment to perform the Work, unless otherwise authorized in writing by the Director's Representative.

C. Remove all tools and materials from patient occupied work areas when the work areas are not attended by employees and at the end of each work day. Store tools in a locked tool box, cabinet, or shed. Store materials where directed, in a location secure from access by patients and clients.

1.10 WATER CONTROLS

A. Provide and maintain pumping equipment necessary to keep the work areas free from water. Discharge water into existing storm drainage systems or otherwise disperse as directed.

1.11 FIRE PREVENTION

A. Take precautions necessary to prevent fires.

B. Fuel for cutting and heating torches shall be acetylene or LP-gas only and shall be contained in Underwriters Laboratory or Federal Department of Transportation approved containers.

C. Furnish and maintain a currently inspected 20 pound capacity multi-class A:B:C fire extinguisher in the immediate vicinity where welding tools or torches are in use.

D. Furnish and maintain a currently inspected fire extinguisher of the appropriate class and size whenever the temporary storage of materials changes that areas classification of fire load or life safety.

E. Do not use flammable liquids, other than those specified, within a building without the written approval from the Director's Representative.

F. Tarpaulins shall be flameproof and shall be securely anchored when attached to scaffolding or when used to enclose any portion of a building.

G. If required by the nature of the work and facility regulations, the Contractor shall obtain from the facility and pay all costs associated with "Hot Work Permits" including fire watches to execute the work of its contract. Perform hot work in accordance with the Fire Code of New York State and the Hot Work Program approved for the work. Prior to, during and after performing hot work, inspect the hot work area for compliance with the requirements of the permitted Hot Work Program.

   1. Post signage "Caution: Hot Work In Progress - Stay Clear" in conspicuous locations warning others before they enter a hot work area where the area is accessible to persons other than the operator of the hot work equipment.

H. Include facility hot works permit program requirements in the project manual appendix.

   1. See applicable facility permits and conditions bound in the Appendix.

1.12 TEMPORARY FIRE PROTECTION

A. If the existing building is to be partially occupied during the course of the project, all existing exits, fire walls, fire barriers and fire protection systems shall be continuously maintained in the occupied phases in compliance with the Fire Code of New York State. Comply with NFPA 241 for items not specifically addressed in the Fire Code of New York State.

B. Those portions occupied by the facility must be available for their use 24 hours a day, seven days a week during the contract period unless otherwise scheduled in these documents.

C. Prior to removal of existing fire walls, fire barriers and fire protection systems, if such removal is part of the work, install equivalent temporary fire walls, fire barriers and fire protection systems as defined in these documents and as approved by the Director's Representative and/or the facilities representative.

D. The cost of all labor, fire watches, variances, materials, installations, maintenance and removal of such temporary fire protection systems or modifications to the existing systems are the responsibility of the Contractor. Install permanent fire walls, fire barriers and fire protection systems, if provided as part of the work, as soon as practical.

1.13 ACCESS ROADS

A. Routes of ingress and egress on the premises to the location of the Work shall be as directed.

B. Keep designated access roads clear of dirt and debris resulting from the Work.

C. Provide means of removing mud from vehicle wheels before entering paved roads.

1.14 PARKING

A. All Contracts:

1. Park vehicles in areas where directed.
2. Keep designated parking areas clear of dirt and debris resulting from the Work.
3. If requested, register vehicles which are to be parked at the Facility with the Facility Safety/Security Department.
4. Remove ignition key from unattended vehicles and lock doors.

B. Construction Work Contract: Remove snow from parking areas allocated to all Contractors.

C. No parking will be allowed at the Site, except for vehicles delivering material and equipment while they are being unloaded.

1.15 RUBBISH REMOVAL

A. Clean up and containerize the rubbish (refuse, debris, waste materials, and removed materials and equipment) resulting from the Work at least once a day and more often if the rubbish interferes with the work of others or presents a hazard. Leave work areas broom clean, except where more stringent cleaning is specified, at the end of each day. Locate containerized rubbish on the Site where directed.

B. Remove rubbish from State property at least once a week and more often if the rubbish presents a hazard. Properly dispose of rubbish.

C. Burning of rubbish will not be permitted.

D. Also comply with the requirements of Section 017419.

1.16 RELOCATION AND REMOVALS

A. Should a change in location of any construction facilities and temporary controls be necessary in order to progress the Work properly, remove and relocate such items as directed.

1. Electrical Work Contract: Frequently relocate/revise the temporary lighting as Contractors progress the Work of their contracts causing changes to the condition of the building (installation or relocation of walls, partitions, ceilings, equipment, etc.). Keep pace with the changes and maintain a minimum of 10 foot candles in each recomposed work area.

B. Remove the construction facilities and temporary controls when they are no longer required. Restore permanent facilities used for or connected to temporary facilities to their original condition or better.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 015000

SECTION 015123 - CONSTRUCTION HEAT AND TEMPORARY HEAT

PART 1 - GENERAL

1.1 CONSTRUCTION HEAT - ALL CONTRACTS

A. Prior to the time the building or any major part of the building is enclosed, provide construction heat (as differentiated from temporary heat), of a nature as required and approved to accomplish the following:

1. Protect subgrade and above grade cast in place concrete as specified in the contract, from freezing.
2. Protect materials and equipment being installed as part of the Contract from freezing.
3. Enable workers to accomplish their respective tasks in a satisfactory manner.
4. Maintain construction schedules.

B. Do not use electric heaters.

1.2 TEMPORARY HEAT - BUILDING ENCLOSED

A. Construction Work Contract:

1. Temporary heat shall be provided under the Construction Work Contract for all Contracts related to the Project.
2. Provide temporary heat, starting at such time as directed, when in the opinion of the Director's Representative, the building, or any major part of it is enclosed.

a. The building, or any part of it, shall be considered enclosed when the exterior walls and roof deck or overhead closures are sufficiently completed to exclude the elements, except for windows, doors, ventilators, and similar openings which shall be temporarily sealed weathertight with suitable closures.
b. In the event a building under construction is of window wall design, and the window walls are not installed as scheduled, provide temporary weathertight wall closures in sufficient time so as not to delay construction of the building.

3. Include in the contract sum the cost of providing temporary heat for 524 days.

a. The actual number of days required for temporary heat shall be as determined by the Director's Representative.
b. In the event such determination results in more or less than the specified number of days, the contract sum will be adjusted by Order on Contract.
c. Applicable daily charges for price adjustment (if any) shall be the average daily rate paid during the period of temporary heat, i.e. (total cost of providing temporary heat divided by the number of days). Furnish daily records of temporary heat costs to the Director's Representative, so that necessary price adjustments may be calculated.

4. Temporary heat consists of, but is not limited to, the following:

a. Furnishing and operating a sufficient number of temporary heating units to maintain required temperatures.
b. Furnishing units of approved manufacture, complete with a combustion chamber and a smoke flue outlet, so designed that all products of combustion are vented through smoke flue piping to the exterior of the building. Do not use electric heaters.
c. Furnishing fuel for maintaining temporary heat.
d. Maintaining building temperature between 45 and 55 degrees F, unless higher temperatures are required for the installation of specified materials.
e. Moving, relocating, and adjusting heating units as required or directed, to protect the Work of all Contracts.
f. Taking precautions necessary to protect all portions of the building from smoke or gas damage and to prevent hazardous conditions which could result in damage to property or injury to persons.

5. In addition:

a. Provide and maintain eight inch scale direct reading thermometers in the building, at locations directed.
b. Provide where directed in the building, seven day, self contained recording thermometers, for the purpose of recording air temperatures in the building.

6. Thermometers: Model SL4100 by Dickson Data, 920 S. Westwood Ave., Addison, IL 60101, (800) 757-3747, www.dicksondata.com.
7. Charts: Furnish and deliver to the Director's Representative at the site, a supply of charts and ink, in quantity as required for the duration of temporary heat. Furnish charts of the 7 day type, designed for working temperatures from 0 degrees F to 100 degrees F (Dickson Model 2012).
8. The Director's Representative will maintain operation of the thermometers.
9. Recording thermometers and charts shall become the property of the State.

1.3 RESPONSIBILITY

A. Construction Work Contract:

1. Assume responsibility for damage due to frost and freezing during the period when temporary heat is required to be provided. Repair damage due to improper equipment, such as stains, smudges, soot or fire.

B. All Contracts:

1. Progress the Work so that temporary heat can be provided as and when specified and directed.

1.4 TEMPORARY HEAT - OPERATION BY STATE PERSONNEL

A. When, in the opinion of the Director's Representative, the permanent heating system is completed, the Director's Representative will arrange for operation of the heating system in accordance with the provisions of Article 20 of the General Conditions concerning State

occupation and operation. At such time, Contractor will be relieved of responsibility for temporary heat.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 015123

SECTION 016500 – MATERIALS AND EQUIPMENT

PART 1 - GENERAL

1.1 RELATED REQUIREMENTS SPECIFIED ELSEWHERE

A. Specific requirements pertaining to materials and equipment specified elsewhere are additional to the provisions of this Section.

1.2 PRODUCT LABELS

A. When materials or equipment are specified to conform to ASTM, Federal or other reference specifications, the materials delivered to the site shall bear the manufacturer's printed labels stating that the materials meet the requirements of such referenced specifications.

1.3 TRANSPORTATION AND HANDLING

A. Deliver factory packaged materials and equipment in the manufacturer's original containers.

B. Transport and handle materials and equipment in such a manner as to prevent their damage.

C. Arrange for delivery of materials and equipment during the hours of the day established by the Director's Representative.

D. Have workers available to receive and unload materials and equipment delivered to the site. Do not deliver, or have delivered, any materials and equipment to the site unless such forces are available.

E. Facility personnel are not authorized to sign for receipt of Contractor's material or equipment.

1.4 STORAGE AND PROTECTION

A. Neatly pile, store, protect, and secure materials and equipment in locations where directed.

B. Protect materials and equipment subject to damage by temperature or other weather conditions.

C. Do not store volatile liquids in a State building.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 016500

SECTION 017329 – REMOVALS, CUTTING, AND PATCHING

PART 1 - GENERAL

1.1 RELATED WORK SPECIFIED ELSEWHERE

A. Construction Waste Management: Section 017419.

1.2 DEFINITIONS

A. Remove: Detach items from existing construction and dispose of them off-site unless indicated to remain the Property of the State.

1.3 PROJECT CONDITIONS

A. Existing Conditions: Do not disturb existing structures, construction, materials or equipment unless required by the Contract.

1. Do not cut, drill, or remove structural members such as joists, beams or columns supporting construction that is to remain unless expressly required by the Contract Documents.

B. Existing Paint: Assume existing painted surfaces to contain lead based paints. Take precautions as required to prevent spread of lead containing particles and dust.

C. Existing Paint: A lead survey was performed on existing surfaces for the presence of lead based paints. A list of the surfaces tested and the results of the survey are in Document 003126. Take precautions as required to prevent the spread of lead containing particles and dust.

1. Assume existing painted surfaces that have not been tested to contain lead based paint. Take precautions as required to prevent spread of lead containing particles and dust.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Match the appearance and performance of existing corresponding materials as closely as practicable, unless otherwise indicated.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Prior to cutting, drilling or removal, investigate both sides of the surface involved. Determine the exact location of structural members.

B. If unforeseen obstructions are encountered, take precautions necessary to prevent damage and obtain instructions from the Director's Representative before proceeding with the Work.

3.2 PREPARATION

A. Provide temporary shoring and other supports necessary to prevent settlement or other damage to existing construction which is to remain.

B. Prepare existing surfaces properly to receive and, where required, bond with the Work.

3.3 REMOVALS, CUTTING, AND ALTERING

A. In addition to the items indicated to be removed on the Drawings, remove existing construction superseded by the Work except items such as pipes, conduits, recessed boxes, and ducts which are built into existing construction that is to remain. Cut off and conceal such items at face of remaining construction. Provide cover plates on recessed boxes.

B. Remove and alter existing construction as required to install and connect the Work to adjacent construction in an approved manner.

C. Cut and alter existing materials as required to perform the Work. Limit cutting to the smallest amount necessary. Core drill round holes and saw cut other openings where possible.

D. Perform cutting, drilling, and removals in a manner which will prevent damage to construction which is to remain.

E. Perform removal of items to remain the property of the State with such care as necessary to prevent damage to these items.

3.4 PATCHING

A. Patch existing construction and finishes defaced, damaged, or left incomplete due to alterations and removals. Patching, except as otherwise indicated, shall be limited to the areas which have been cut or altered. Finish patched surfaces to match existing adjacent surfaces as closely as practicable.

B. Perform patching around items penetrating existing construction in a manner that will maintain the water and fire resistive capability of the existing construction.

C. Paint patched areas and cover plates to match existing adjacent surfaces as closely as practicable using same type of paint. Painting, except as otherwise indicated, shall be limited to the areas which have been patched.

D. Where surfaces exposed by removals are to remain as exposed surfaces, paint such areas to match existing adjacent surfaces as closely as practicable using same type of paint.

3.5 REINSTALLATION

A. Where reinstallation of removed items is indicated, reinstall them to a condition equal to or better than their condition before removal.

END OF SECTION 017329

SECTION 017419.01 - CONSTRUCTION WASTE MANAGEMENT

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes requirements for Construction Waste Management (CWM), with criteria for recycling and/or salvaging demolition and construction waste generated during the project. A Construction Waste Management (CWM) Plan shall be developed for approval by the Director's Representative. The Plan shall be implemented throughout the duration of the project and shall be documented in accordance with the SUBMITTALS Article below.

B. Each contract shall supply the means for proper disposal, recycling, and/or salvaging job site waste. Locations for removal bins or dumpsters shall be coordinated with Directors Representative.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A.

B. Site Clearing: Section 311000

1.3 PERFORMANCE REQUIREMENTS

A. Each Contract shall prepare and submit a Construction Waste Management (CWM) Plan to the Director's Representative for approval. The CWM Plan shall outline the provisions to be implemented to properly dispose of, recycle, and/or salvage demolition and construction waste generated during the project.

1. The CWM Plan should be developed with a goal of diverting 75% of waste away from landfill.

B. Upon approval of the CWM Plan by the Director's Representative, it shall be implemented throughout the duration of the project and documented in accordance with the SUBMITTALS Article below.

C. Unless otherwise indicated, demolition and construction waste become the property of the Contractor.

D. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their content, commemorative plaques and tablets, and other items of interest or value that may be uncovered during demolition remain the property of the State. Coordinate with Director's Representative.

1. Carefully salvage in a manner to prevent damage and promptly return to the Director's Representative.

E. The CWM Plan shall include, but not be limited to, the following components:

1. Identify a single point of contact to act as the Construction Waste Manager. Provide the individuals name, email, and phone number.
2. Listing of Materials: Develop a list of the waste materials and expected quantity from the Project. Categorize what will be targeted for reuse, salvage, composting, recycling, or disposal at landfill. At minimum, the following materials shall be accounted for:

    a. Acoustical tiles & panels
    b. Aggregates
    c. Asphalt roofing shingles
    d. Asphalt
    e. Beverage containers
    f. Bricks
    g. Cardboard, paper, packaging
    h. Carpet and pad
    i. Clean dimensional wood, palette wood
    j. Concrete Masonry Units (CMU) and accessories
    k. Concrete
    l. Conduit, wiring, and support hangers
    m. Piping, sprinklers, and valves
    n. Electronics & equipment
    o. Furniture such as tables, chairs, desks, partitions, shelving, etc.
    p. Glass
    q. Gypsum board
    r. Insulation
    s. Lamps and light fixtures
    t. Land clearing debris
    u. Mechanical equipment
    v. Metals from banding, stud trim, ductwork, piping, rebar, roofing, windows, other trim, steel, iron, galvanized sheet steel, stainless steel, structural steel, aluminum, copper, zinc, lead, brass, and bronze
    w. Office supplies
    x. Paint
    y. Plastics
    z. Refrigerants
    aa. Rigid Foam
    bb. Building components, such as doors, windows, hardware, and plumbing fixtures
    cc. Stone
    dd. Temporary construction materials
    ee. Universal Waste
    ff. Woods

3. Sorting Method: Provide a description of the proposed means of sorting and transporting the recyclable materials (whether materials will be site-separated and self-hauled to designated centers, or whether mixed materials will be collected by a waste hauler and removed from the site for off-site sorting).

    a. If off-site sorting is utilized, the facility shall provide a sorting method description to be included in the CWM Plan.

4. Compost Facility: Provide the name and address of the composting facility where compostable material will be accepted and current NYSDEC permit.
5. Composting: Provide a description of the proposed means of ensuring compostable material remains uncontaminated during construction and transportation.
6. Packaging Waste: Provide an estimate of packaging materials generated and note whether suppliers will eliminate or take back packaging. Packaging material may include, but is not limited to:

    a. Paper
    b. Cardboard
    c. Boxes
    d. Plastic sheet and film
    e. Polystyrene packaging
    f. Wood crates
    g. Wood pallets
    h. Plastic pails

7. Landfill Information: Provide the name and address of the landfill(s) where trash will be disposed of and current operating permit.
8. Recycling facilities: Provide the name and address of the recycling facilities(s) where materials will be sent for recycling, current operating permit, and description of how it will be recycled.
9. Universal Waste Facility: Provide the name and address of the facility where universal waste will be disposed of and current NYSDEC permit.
10. Refrigerant Recovery Technician Qualifications: The technician shall be **Universal** certified by EPA approved certification program.
11. Waste Transporter: Provide name and address of proposed waste transporters and appliable NYSDEC registration and/or permits.
12. Re-Used materials/Equipment: Materials or equipment to be removed from the site or turned over to the State which are classified as recycled materials and shall be documented. Documentation shall include the materials turned over, weight or quantity of materials/equipment and a letter on company letterhead indicating the intended use of items.
13. Additional Information: Include any additional information deemed relevant to describe the scope and intent of the CWM Plan to the Director's Representative.
14. Subcontractor Requirements: CWM and recycling requirements shall be incorporated into all Subcontractor's contracts.

1.4 SUBMITTALS

A. Submittal Requirements:

1. A copy of the Construction Waste Management (CWM) Plan, as defined in the PERFORMANCE REQUIREMENTS Article above.
2. Contractors shall submit monthly CWM Reports. This submission shall include explanation of actual waste management compared to the CWM Plan, waste receipts and a completed CWM Reporting Form (sample included at the end of this Section identified as Exhibit "A").

3. Calculations and supporting documentation to demonstrate disposal, recycling, and/or salvage rates meeting the requirements of the CWM Plan. The process for recording and assembling documentation shall be as follows:

   a. Record and document the quantity of all demolition and construction waste materials sent to the landfill. The final reporting form shall specify:

      1) The type of waste disposed of.
      2) The total quantity of the waste disposed of.
      3) Provide the name and permit of the landfill that accepted the materials. Receipts or other proof of facility reception of materials is required.

   b. Record and document the total quantity of all demolition and construction waste materials reused on-site, reused off-site, recycled, or otherwise salvaged. The final reporting form shall specify:

      1) The type of reused, recycled, or salvaged material.
      2) he quantity of the reused, recycled, or salvaged material.
      3) Provide the name and permit of the receiving facilities/companies that purchased or accepted the reused, recycled, or salvaged materials. Receipts or other proof of facility reception of materials is required.
      4) For materials separated for recycling off-site, establish a method for tracking the quantity of the recycled material. The method shall be included in the CWM Plan for the Director's Representative review and approval.

   c. Record and document the total quantity of materials composted. The final reporting form shall specify:

      1) The type of material composted.
      2) The quantity of the material composted.
      3) Provide the name and permit of the receiving facilities/companies that purchased or accepted the material to be composted. Receipts or other proof of facility reception of materials is required.

   d. For materials turned over to others (not the State) for reuse (sale or donation), provide documentation on company letterhead indicating the material(s), the quantity (either by weight or units), the date, contact information, indicate whether the organization is tax exempt, and the intended reuse of the product.
   e. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant that was present was recovered.

B. Contract Closeout Submittals:

   1. Contractors shall submit a Final Waste Management Report. This submission shall compile all monthly data for the duration of the project. The final report shall include an explanation of actual waste managed, lessons learned, and a final CWM Reporting Form. Resubmission of waste receipt is not necessary.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 IMPLEMENTATION

A. The Contractor shall be responsible for the provision of containers and the removal of all waste, non-returned surplus materials, and rubbish from the site in accordance with the CWM Plan. The Contractor shall oversee and document the results of the Plan. Each trade shall be responsible for collecting, sorting, and depositing in designated areas, their waste, non-returned surplus materials, and rubbish, as per the CWM Plan.

1. The Prime Contractor shall be responsible for ensuring their subcontractors abide by the CWM Plan.

B. Instruction: The Contractor shall provide on-site instruction of appropriate separation, handling and recycling, salvage, reuse and return methods to be used by all parties in appropriate stages of the Project.

C. Separation Facilities: The Contractor shall provide signage for specific area(s) to facilitate separation of materials for potential recycling, salvage, composting, reuse, and return. Signage shall be multi-lingual as appropriate. Each potential material shall be collected and stored to avoid being mixed with other materials. Recycling and waste bin areas are to be kept neat and clean, and clearly marked.

3.2 MEETINGS

A. Conduct CWM meetings. Meetings shall include Subcontractors affected by the CWM Plan. At a minimum, waste management goals and issues shall be discussed at the following meetings:

1. Pre-bid meeting.
2. Pre-construction meeting.
3. Regular job-site meetings.
4. Close out meeting.

B. Any non-compliant practices in the field will be addressed at regular job-site meetings.

3.3 MONTHLY CONSTRUCTION WASTE MANAGEMENT REPORTING

A. Monthly CWM Reporting Forms, as required in the SUBMITTALS Article above, shall be submitted to the Director’s Representative for review throughout the duration of the project.

END OF SECTION 017419.01

SECTION 017716 – CONTRACT CLOSEOUT

PART 1 - GENERAL

1.1 RELATED REQUIREMENTS SPECIFIED ELSEWHERE

A. Other provisions pertaining to this Section are included in Article 9 of the General Conditions.

1.2 CONTRACT CLOSEOUT INSPECTIONS

A. The following 3 inspections will be made in addition to the normal inspections to ensure that all Contract requirements are met and that the Work is complete and acceptable. The purpose of each of these inspections is to furnish the Contractor a written list of Contract exceptions, omissions, and incompletions so that the Work can be progressed to timely completion in accordance with the Contract Documents.

1. Detailed Inspection: The "Detailed Inspection" will be made when the Work is substantially complete. A copy of the detailed inspection list will be furnished to the Contractor. When this inspection progresses over any length of time, copies of the list will be furnished as the inspection progresses so that the Contractor may proceed with the required Work without delay.
2. Final Inspection: The Contractor will be advised by letter of the date and time of final inspection. A copy of the final inspection list containing all incomplete or unsatisfactory items and the time allowed to complete the Work will be furnished to the Contractor.
3. Joint Inspection for Physical Completion: The joint inspection for physical completion may be made to verify completion of the exception items listed on the final inspection list so that the physical completion date (defined in the General Conditions) may be established.

1.3 FINAL CLEANING

A. Perform final cleaning prior to joint inspection for physical completion. Leave the premises in a neat, unobstructed condition, the work areas broom clean (except where more thorough cleaning is specified), and everything in perfect repair and adjustment.

B. Clean site; sweep paved areas, rake clean landscaped surfaces.

C. Remove tools, equipment, waste and surplus materials, rubbish, and construction facilities from the premises as soon as possible upon completion of the Work.

1.4 PROJECT RECORD DOCUMENTS

A. Maintain on site, 2 sets of the following record documents; record actual revisions to the Work.

1. Contract Drawings.
2. Project Manual.

3. Addenda.
4. Change Orders and other modifications to the Contract.
5. Reviewed shop drawings, product data, and samples.

B. Store record documents separate from documents used for construction.

C. Record information concurrent with construction progress.

D. Record Documents and Shop Drawings: Legibly mark each item to record actual construction including.

1. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
2. Field changes of dimension and detail.
3. Details not on original Contract Drawings.

E. Upon completion of the work, create electronic versions of the project record documents. Black and white documents are to be scanned into TIFF format using CCIT Group 4 compression. Documents with color, which include black line documents with color notations, are to be scanned into TIFF format using a minimum of 8 colors and "packbits" compression test.

1. The scanned images are to be put on a USB flash drive using NTFS/NTFS5 format. Name the electronic files with the same name as the drawing. Create a folder on the USB flash drive for each trade and one for Shop Drawings.
2. Label the USB flash drive with the project number, name, and title as it appears on the project manual cover. If there is more than one USB flash drive include notation to that effect on the label; i.e., 1 of 3, 2 of 3, 3 of 3. The project record documents, and USB flash drive(s) are to be turned over to the Director's Representative.

F. Applications for progress payments will not be approved if the record documents are not kept current. Application for final payment will not be approved until the project record documents are delivered to the Director's Representative.

1.5 OPERATION AND MAINTENANCE DATA

A. Prepare 2 sets comprised of 8-1/2 x 11 inch text pages bound in capacity expansion binders with durable plastic covers identified with printed title "OPERATION AND MAINTENANCE INSTRUCTIONS", title of project, and subject matter of binder when multiple binders are required. Prepare a printed Table of Contents for each volume, with each product or system description identified. Internally subdivide the binder contents with permanent page dividers, logically organized as described below, with tab titles clearly printed under reinforced laminated plastic tabs:

Part 1: Directory, listing names, addresses, and telephone numbers of Architect/Engineer, Contractor, subcontractors, and major equipment suppliers.

Part 2: Operation and maintenance instructions, arranged by system and subdivided by specification section. For each category, identify names, addresses, and telephone numbers of subcontractors and suppliers. Identify the following:
1. Significant design criteria.

2. List of equipment.
3. Parts list for each component.
4. Operating instructions.
5. Maintenance instructions for equipment and systems.
6. Maintenance instructions for finishes, including recommended cleaning methods and materials and special precautions identifying detrimental agents.

Part 3: Project documents and certificates, including the following:
1. Shop drawings and product data.
2. Air and water balance reports.
3. Certificates.
4. Photocopies of warranties.

B. Submit one copy of completed volumes in final form 15 days prior to final inspection. This copy will be returned after final inspection, with the Director's comments. Revise content of documents as required prior to final submittal.

C. Submit 2 volumes prior to final Application for Payment.

1.6 WARRANTIES

A. Furnish warranty certification and copies of warranties that extend beyond the one year period required by the General Conditions. Warranties submitted without warranty certification will not be accepted.

1. Warranty Certification: Written certification from the warrantor that invoices for installation, service, supplies, and warranty fees have been paid in full to persons or firms due payment, and that the warranty is in effect and non-retractable due to any of the specified conditions.

B. Prepare printed Table of Contents and assemble warranty certifications and warranty copies in a binder with a durable plastic cover.

C. Deliver the binder to the Director's Representative prior to final Application for Payment.

D. For items of Work delayed beyond date of Substantial Completion, provide updated submittal within 10 days after acceptance, indicating date of acceptance as start of warranty period.

E. Applications for final payment will not be approved until the warranty certification and warranty documents are delivered to the Director's Representative.

1.7 SPARE PARTS AND MAINTENANCE MATERIALS

A. Label and deliver spare parts, maintenance items, and extra materials to the Site. Place in locations as directed.

1. Include "NOT FOR WARRANTY REPAIRS" on the labels.
2. Obtain receipt prior to final payment.

B. Do not use the spare parts and maintenance materials required by the Contract Documents to remedy defects during the one-year period described in Paragraph 9.8 of the General Conditions except when approved otherwise by authorized Facility Representative. In such cases, replace items used.

C. Furnish the names, business addresses, and telephone numbers of fully equipped authorized service organizations to the Director's Representative.

D. Applications for final payment will not be approved until these items are delivered to the Director's Representative.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 017716

SECTION 023313 - UNDERGROUND UTILITY LOCATOR SERVICE

PART 1 - GENERAL

1.1 RELATED WORK SPECIFIED ELSEWHERE

A. Field Engineering: Section 017123.

1.2 REFERENCES

A. American Society of Civil Engineers, ASCE/UESI/CI 38-22, “Standard Guideline for Investigating and Documenting Existing Utilities.”

B. American Public Works Association, Uniform Color Code.”

1.3 DEFINITIONS

A. Utility Quality Levels:

1. Level A: Precise horizontal and vertical location of utilities obtained by the actual exposure (or verification of previously exposed and surveyed utilities) and subsequent measurement of subsurface utilities, usually at a specific point. Minimally intrusive excavation equipment is typically used to minimize the potential for utility damage. A precise horizontal and vertical location, as well as other utility attributes, is shown on plan documents. Accuracy is typically set to 0.1ft vertical and to applicable horizontal survey and mapping accuracy as defined or expected by the project owner.
2. Level B: Information obtained through the application of appropriate surface geophysical methods to determine the existence and approximate horizontal position of subsurface utilities. Quality level B data should be reproducible by surface geophysics at any point of their depiction. This information is surveyed to applicable tolerances defined by the project and reduced onto plan documents.
3. Level C: Information obtained by surveying and plotting visible above-ground utility features and by using professional judgment in correlating this information to quality level D information.
4. Level D: Information derived from existing utility records, oral recollections, or visual clues such as pavement cuts, obvious trenches, or existence of service.

1.4 DESCRIPTION

A. Retain an independent utility locator service company to field locate and mark existing underground utilities and service connections. The word "independent" as used above means a person not in the regular employment of the Contractor or having any vested interest in the Contractor's business.

1. Level B locator service shall be performed in all project areas where excavations, regrading of the ground surface, and penetrations of the ground surface are to be performed.

a. Contractor shall include a minimum of 16 hours of Level A locator service to locate underground utilities as identified on the contract drawings or as identified during the Level B investigation that require more specific location, invert elevation, size, etc. Level A investigation shall only be performed at identified locations or as directed.
b. In heavy metal areas, such as near perimeter fences, ground penetrating radar shall be used to determine the location of underground utilities. The use of equipment that induce a tracing signal along the utility path (such as a Metrotech unit) can cause false readings, shall not be used within five feet of fences.

2. The Level A investigation shall be performed as follows:

a. Hand excavation may be performed for depths of three feet or less.
b. Vacuum excavation shall be performed at depths greater than three feet.
c. All excavation test pits shall be backfilled by close of business that day.

3. Support and protect all utilities and service connections to remain in place.
4. The locator service shall field locate and mark underground utilities and service connections prior to excavation.
5. The contractor shall be responsible for coordinating the extent of the areas of subsurface investigation required to locate all underground utilities and service connections in the areas of excavation.
6. All costs associated with the repair of underground utilities and service connections hit/damaged during the investigative work shall be the responsibility of the contractor.
7. Utility location services shall be in accordance with the provisions of ASCE/UESI/CI 38-22, “Standard Guideline for Investigating and Documenting Existing Utilities.”

1.5 SUBMITTALS

A. Quality Control Submittals:

1. Submit detailed experience and qualification information about the underground utility locator service company and the persons that will be performing the Work. Detailed experience and qualification information shall include:

    a. Minimum of five (5) years experience in field locating, marking and staking out of existing underground utilities and service connections.

        1) Qualifying Experience: Project information of 5 similar projects, which the locator service company, had worked on during the past 5 years. Information shall include for each project:

            a) Name and Address of project.
            b) Dates worked on project.
            c) Name and telephone Number of contact person at the project site for which the locator service was performed.

    b. Description of types of utility locator equipment (investigation equipment) that company will utilize to perform the underground utility investigation.
    c. Names of persons that the persons that will be performing the Work, including the number of years of experience and training that the persons have in the use of the equipment. Include copy of training certificates for locator equipment proving the person performing the locator service are trained on the equipment being used.

2. Submit Quality Control Submittals within 10 days of contract award.

B. Investigative Report:

1. Submit detailed written report and scaled drawings of the subsurface investigation, documenting all underground utilities and service connections located and identified.

    a. All documentation shall be referenced to existing data (horizontal and vertical) previously established.
    b. Provide three (3) paper copies and one (1) electronic copy of detailed written report and drawings.

2. Submit Investigative Report at least two weeks prior to advancing construction within the scheduled areas of excavation within the project site.

1.6 COORDINATION AND SCHEDULING

A. Coordinate the Work to determine the extent of the areas of subsurface investigation required to locate all underground utilities and service connections in the areas of excavation.

B. Coordinate the Work with the Director's Representative to minimize utility disruptions and facility operations. Provide a schedule for the Work required to the Director's Representative for approval. Upon approval of the schedule, notify the Director's Representative a minimum of three (3) working days prior to performing the Work.

C. Within the areas of excavation, all underground utilities and service connections shall be field located, and their locations marked at least two (2) weeks prior to the performance of the required excavation work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 WORK AREAS AND PERFORMANCE

A. If any underground utilities and service connections are hit or damaged during the Work, immediately inform the Director's Representative for directions on how to proceed.

B. The utility locator service investigative work, field location and marking of underground utilities and service connections and submission of the investigative report must be completed before any excavation work can begin.

1. Contractor shall maintain markings throughout the contract duration or until a time when directed (in writing) by the Director's Representative that maintaining of the markings are no longer required.

C. Provide subsurface investigation information, detailed written report and drawings of the subsurface investigation, documenting all underground utilities and service connections located and identified, prior to the performance of the required excavation work.

D. If during the Level B investigations, unknown underground utilities are discovered, the Director's Representative shall be notified as soon as possible or before the close of that business day.

E. Field Marking of underground utilities shall follow the American Public Works Association (APWA) uniform color code:

1. White: Proposed Excavation.
2. Pink: Temporary Survey Markings.
3. Red: Electric power lines, cables, conduit and lighting cables.
4. Yellow: Gas, oil, steam, petroleum and gaseous material.
5. Orange: Communications, alarm, signal lines, cables or conduit.
6. Blue: Potable water.

7. Purple: Reclaimed water, irrigation and slurry lines.
8. Green: Sewer and drain lines.

END OF SECTION 023313

SECTION 031000 - CONCRETE FORMING AND ACCESSORIES

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. Form-facing material for cast-in-place concrete.
2. Form liners.
3. Insulating concrete forms.
4. Shoring, bracing, and anchoring.

1.3 DEFINITIONS

A. Form-Facing Material: Temporary structure or mold for the support of concrete while the concrete is setting and gaining sufficient strength to be self-supporting.

B. Formwork: The total system of support of freshly placed concrete, including the mold or sheathing that contacts the concrete, as well as supporting members, hardware, and necessary bracing.

1.4 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1. Review the following:

a. Special inspection and testing and inspecting agency procedures for field quality control.
b. Construction, movement, contraction, and isolation joints
c. Forms and form-removal limitations.
d. Shoring and reshoring procedures.
e. Anchor rod and anchorage device installation tolerances.

1.5 SUBMITTALS

A. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Manufacturer's installation instructions shall be provided along with product data.

C. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).

D. Product Data: For each of the following:

1. Exposed surface form-facing material.
2. Concealed surface form-facing material.
3. Forms for cylindrical columns.
4. Pan-type forms.
5. Void forms.
6. Form liners.
7. Insulating concrete forms.
8. Form ties.
9. Waterstops.
10. Form-release agent.

E. Sustainable Design Submittals:

1.

F. Shop Drawings: Prepared by, and signed and sealed by, a qualified professional engineer, registered in New York State, responsible for their preparation, detailing fabrication, assembly, and support of forms.

1. For exposed vertical concrete walls, indicate dimensions and form tie locations.
2. Indicate dimension and locations of construction and movement joints required to construct the structure in accordance with ACI 301.

    a. Location of construction joints is subject to approval of the Director's Representative.

3. Indicate location of waterstops.
4. Indicate form liner layout and form line termination details.
5. Indicate proposed schedule and sequence of stripping of forms, shoring removal, and reshoring installation and removal.
6. Indicate layout of insulating concrete forms, dimensions, course heights, form types, and details.

G. Samples:

1. For waterstops.
2. For Form Liners: 12-inch by 12-inch sample, indicating texture.

H. Qualification Data: For testing and inspection agency.

I. Research Reports: For insulating concrete forms indicating compliance with International Code Council Acceptance Criteria AC353.

J. Field quality-control reports.

K. Minutes of preinstallation conference.

1.6 QUALITY ASSURANCE

A. Testing and Inspection Agency Qualifications: An independent agency, acceptable to authorities having jurisdiction, qualified in accordance with ASTM C1077 and ASTM E329 for testing indicated.

B. Mockups: Formed surfaces to demonstrate typical joints, surface finish, texture, tolerances, and standard of workmanship.

1. Build panel approximately 100 sq. ft. in the location indicated or, if not indicated, as directed by Director's Representative.
2. Subject to compliance with requirements, approved mockups may become part of the completed Work.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Form Liners: Store form liners under cover to protect from sunlight.

B. Insulating Concrete Forms: Store forms off ground and under cover to protect from moisture, sunlight, dirt, oil, and other contaminants.

C. Waterstops: Store waterstops under cover to protect from moisture, sunlight, dirt, oil, and other contaminants.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Concrete Formwork: Design, engineer, erect, shore, brace, and maintain formwork, shores, and reshores in accordance with ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads, so that resulting concrete conforms to the required shapes, lines, and dimensions.

1. Design wood panel forms in accordance with APA's "Concrete Forming Design/Construction Guide."
2. Design formwork to limit deflection of form-facing material to 1/240 of center-to-center spacing of supports.

B. Design, engineer, erect, shore, brace, and maintain insulating concrete forms in accordance with ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads, so that resulting concrete conforms to the required shapes, lines, and dimensions.

1. Design cross ties to transfer the effects of the following loads to the cast-in-place concrete core:

    a. Wind Loads: As indicated on Drawings.

        1) Horizontal Deflection Limit: Not more than 1/240 of the wall height.

2.2 FORM-FACING MATERIALS

A. As-Cast Surface Form-Facing Material:

1. Provide continuous, true, and smooth concrete surfaces.
2. Furnish in largest practicable sizes to minimize number of joints.
3. Acceptable Materials: As required to comply with Surface Finish designations specified in Section 033000 "Cast-In-Place Concrete, and as follows:

    a. Plywood, metal, or other approved panel materials.
    b. Exterior-grade plywood panels, suitable for concrete forms, complying with DOC PS 1, and as follows:

        1) APA HDO (high-density overlay).
        2) APA MDO (medium-density overlay); mill-release agent treated and edge sealed.
        3) APA Structural 1 Plyform, B-B or better; mill oiled and edge sealed.
        4) APA Plyform Class I, B-B or better; mill oiled and edge sealed.

B. Concealed Surface Form-Facing Material: Lumber, plywood, metal, plastic, or another approved material.

1. Provide lumber dressed on at least two edges and one side for tight fit.

C. Void Forms: Biodegradable paper surface, treated for moisture resistance, structurally sufficient to support weight of plastic concrete and other superimposed loads.

2.3 WATERSTOPS

A. Flexible Rubber Waterstops: U.S. Army Corps of Engineers CRD-C 513, with factory-installed metal eyelets, for embedding in concrete to prevent passage of fluids through joints, with factory fabricated corners, intersections, and directional changes.

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. CETCO is a subsidiary of Minerals Technologies Inc.
    b. Sika Corporation.
    c. Williams Products, Inc.
    d. Approved Equivalent.

2. Profile: Flat dumbbell with center bulb.
3. Dimensions: 4 inches by 3/16 inch thick; nontapered.

B. Chemically Resistant Flexible Waterstops: Thermoplastic elastomer rubber waterstops with factory-installed metal eyelets, for embedding in concrete to prevent passage of fluids through joints; resistant to oils, solvents, and chemicals, with factory fabricate corners, intersections, and directional changes.

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. JP Specialties, Inc.
    b. Sika Corporation.
    c. Approved Equivalent.

2. Profile: Flat dumbbell with center bulb.
3. Dimensions: 4 inches by 3/16 inch thick; nontapered.

C. Flexible PVC Waterstops: U.S. Army Corps of Engineers CRD-C 572, with factory-installed metal eyelets, for embedding in concrete to prevent passage of fluids through joints, with factory fabricate corners, intersections, and directional changes.

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. BoMetals, Inc.
    b. Sika Corporation.
    c. Vinylex Waterstop & Accessories.
    d. Approved Equivalent.

2. Profile: Flat dumbbell with center bulb.
3. Dimensions: 4 inches by 3/16 inch thick; nontapered.

D. Self-Expanding Butyl Strip Waterstops: Manufactured rectangular or trapezoidal strip, butyl rubber with sodium bentonite or other hydrophilic polymers, for adhesive bonding to concrete, 3/4 by 1 inch.

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

    a. Carlisle Coatings & Waterproofing Inc.
    b. Henry Company.
    c. JP Specialties, Inc.
    d. Sika Corporation.
    e. Approved Equivalent.

E. Self-Expanding Rubber Strip Waterstops: Manufactured rectangular or trapezoidal strip, bentonite-free hydrophilic polymer-modified chloroprene rubber, for adhesive bonding to concrete, 3/8 by 3/4 inch.

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. Adeka Corporation.
b. Kryton International Inc.
c. Sika Corporation.
d. Approved Equivalent.

2.4 RELATED MATERIALS

A. Reglets: Fabricate reglets of not less than 0.022-inch- thick, galvanized-steel sheet. Temporarily fill or cover face opening of reglet to prevent intrusion of concrete or debris.

B. Dovetail Anchor Slots: Hot-dip galvanized-steel sheet, not less than 0.034 inch thick, with bent tab anchors. Temporarily fill or cover face opening of slots to prevent intrusion of concrete or debris.

C. Chamfer Strips: Wood, metal, PVC, or rubber strips, 3/4 by 3/4 inch, minimum.

D. Rustication Strips: Wood, metal, PVC, or rubber strips, kerfed for ease of form removal.

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

1. Formulate form-release agent with rust inhibitor for steel form-facing materials.
2. Form release agent for form liners shall be acceptable to form liner manufacturer.

F. Form Ties: Factory-fabricated, removable or snap-off, glass-fiber-reinforced plastic or metal form ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal.

1. Furnish units that leave no corrodible metal closer than 1 inch to the plane of exposed concrete surface.
2. Furnish ties that, when removed, leave holes no larger than 1 inch in diameter in concrete surface.
3. Furnish ties with integral water-barrier plates to walls indicated to receive dampproofing or waterproofing.

PART 3 - EXECUTION

3.1 INSTALLATION OF FORMWORK

A. Comply with ACI 301.

B. Construct formwork, so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117 and to comply with the Surface Finish designations specified in Section 033000 "Cast-In-Place Concrete" for as-cast finishes.

C. Limit concrete surface irregularities as follows:

1. Surface Finish-1.0: ACI 117 Class D, 1 inch.
2. Surface Finish-2.0: ACI 117 Class B, 1/4 inch.
3. Surface Finish-3.0: ACI 117 Class A, 1/8 inch.

D. Construct forms tight enough to prevent loss of concrete mortar.

1. Minimize joints.
2. Exposed Concrete: Symmetrically align joints in forms.

E. Construct removable forms for easy removal without hammering or prying against concrete surfaces.

1. Provide crush or wrecking plates where stripping may damage cast-concrete surfaces.
2. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical.
3. Install keyways, reglets, recesses, and other accessories, for easy removal.

F. Do not use rust-stained, steel, form-facing material.

G. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces.

1. Provide and secure units to support screed strips
2. Use strike-off templates or compacting-type screeds.

H. Provide temporary openings for cleanouts and inspection ports where interior area of formwork is inaccessible.

1. Close openings with panels tightly fitted to forms and securely braced to prevent loss of concrete mortar.
2. Locate temporary openings in forms at inconspicuous locations.

I. Chamfer exterior corners and edges of permanently exposed concrete.

J. At construction joints, overlap forms onto previously placed concrete not less than 12 inches.

K. Form openings, chases, offsets, sinkages, keyways, reglets, blocking, screeds, and bulkheads required in the Work.

1. Determine sizes and locations from trades providing such items.
2. Obtain written approval of Director's Representative prior to forming openings not indicated on Drawings.

L. Construction and Movement Joints:

1. Construct joints true to line with faces perpendicular to surface plane of concrete.
2. Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Director's Representative.
3. Place joints perpendicular to main reinforcement.
4. Locate joints for beams, slabs, joists, and girders in the middle third of spans.

    a. 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.

    a. Locate joints beside piers integral with walls, near corners, and in concealed locations where possible.

M. Provide temporary ports or openings in formwork where required to facilitate cleaning and inspection.

1. Locate ports and openings in bottom of vertical forms, in inconspicuous location, to allow flushing water to drain.
2. Close temporary ports and openings with tight-fitting panels, flush with inside face of form, and neatly fitted, so joints will not be apparent in exposed concrete surfaces.

N. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.

O. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.

P. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.

3.2 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 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.
4. Install dovetail anchor slots in concrete structures, as indicated on Drawings.
5. Clean embedded items immediately prior to concrete placement.

3.3 INSTALLATION OF WATERSTOPS

A. Flexible Waterstops: Install in construction joints and at other joints indicated to form a continuous diaphragm.

1. Install in longest lengths practicable.
2. Locate waterstops in center of joint unless otherwise indicated on Drawings.
3. Allow clearance between waterstop and reinforcing steel of not less than 2 times the largest concrete aggregate size specified in Section 033000 "Cast-In-Place Concrete."
4. Secure waterstops in correct position at 12 inches on center.
5. Field fabricate joints in accordance with manufacturer's instructions using heat welding.

    a. Miter corners, intersections, and directional changes in waterstops.
    b. Align center bulbs.

6. Clean waterstops immediately prior to placement of concrete.
7. Support and protect exposed waterstops during progress of the Work.

B. Self-Expanding Strip Waterstops: Install in construction joints and at other locations indicated on Drawings, according to manufacturer's written instructions, by adhesive bonding, mechanically fastening, and firmly pressing into place.

1. Install in longest lengths practicable.
2. Locate waterstops in center of joint unless otherwise indicated on Drawings.
3. Protect exposed waterstops during progress of the Work.

3.4 INSTALLATION OF INSULATING CONCRETE FORMS

A. Comply with ACI 301 and manufacturer's instructions.

B. Construct formwork, so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.

C. Install forms in running bond pattern.

1. Align joints.
2. Align furring strips.

D. Construct forms tight to prevent loss of concrete mortar.

E. Form openings, chases, offsets, sinkages, keyways, reglets, blocking, screeds, and bulkheads required in the Work.

1. Determine sizes and locations from trades providing such items.
2. Obtain written approval of Director's Representative prior to forming openings not indicated on Drawings.

F. Provide temporary ports or openings in formwork where required to facilitate cleaning and inspection.

1. Locate ports and openings in bottom of vertical forms, in inconspicuous location, to allow flushing water to drain.
2. Close temporary ports and openings with tight fitting panels, flush with inside face of form, and neatly fitted, so joints will not be apparent in exposed concrete surfaces.

G. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.

H. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.

I. Shore insulating concrete forms to ensure stability and to resist stressing imposed by construction loads.

3.5 REMOVING AND REUSING FORMS

A. Formwork for sides of beams, walls, columns, and similar parts of the Work that does not support weight of concrete may be removed after cumulatively curing at not less than 50 deg F for 24 hours after placing concrete. Concrete has to be hard enough to not be damaged by form-removal operations, and curing and protection operations need to be maintained.

1. Leave formwork for beam soffits, joists, slabs, and other structural elements that support weight of concrete in place until concrete has achieved at least 70 percent of its 28-day design compressive strength.
2. Remove forms only if shores have been arranged to permit removal of forms without loosening or disturbing shores.

B. Clean and repair surfaces of forms to be reused in the Work.

1. Split, frayed, delaminated, or otherwise damaged form-facing material are unacceptable for exposed surfaces.
2. Apply new form-release agent.

C. When forms are reused, clean surfaces, remove fins and laitance, and tighten to close joints.

1. Align and secure joints to avoid offsets.
2. Do not use patched forms for exposed concrete surfaces unless approved by Director's Representative.

3.6 SHORING AND RESHORING INSTALLATION

A. Comply with ACI 318 and ACI 301 for design, installation, and removal of shoring and reshoring.

1. Do not remove shoring or reshoring until measurement of slab tolerances is complete.

B. In multistory construction, extend shoring or reshoring over a sufficient number of stories to distribute loads in such a manner that no floor or member will be excessively loaded or will induce tensile stress in concrete members without sufficient steel reinforcement.

C. Plan sequence of removal of shores and reshore to avoid damage to concrete. Locate and provide adequate reshoring to support construction without excessive stress or deflection.

3.7 FIELD QUALITY CONTROL

A. Special Inspections: Director's Representative will engage a special inspector and a qualified testing agency to perform tests and inspections in accordance with the requirements of BDC 406 Summary of Special Inspections and BDC 406.1 Statement of Special Inspections and as directed by the Code Compliance Manager.

END OF SECTION 031000

SECTION 032000 - CONCRETE REINFORCING

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. Steel reinforcement bars.
2. Welded-wire reinforcement.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1. Review the following:

a. Special inspection and testing and inspecting agency procedures for field quality control.
b. Construction contraction and isolation joints.
c. Steel-reinforcement installation.

1.4 SUBMITTALS

A. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Manufacturer’s installation instructions shall be provided along with product data.

C. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).

D. Product Data: For the following:

1. Each type of steel reinforcement.
2. Epoxy repair coating.
3. Zinc repair material.
4. Bar supports.
5. Mechanical splice couplers.
6. Structural thermal break insulated connection system.

E. Submit an Environmental Product Declaration (EPD) from the manufacturer for steel reinforcement bar and mesh within this specification section, if available. A statement of the contractor's good faith effort to obtain the EPD shall be provided if not available.

1. Manufacturer-provided EPDs must be Product Specific Type III (Third-Party Reviewed), in adherence with ISO 14025 *Environmental labels and declarations*, ISO 14044 *Environmental management – Life cycle assessment*, and ISO 21930 *Core rules for environmental product declarations of construction products and services*.

F. Shop Drawings: Comply with ACI SP-066:

1. Include placing drawings that detail fabrication, bending, and placement.
2. Include bar sizes, lengths, materials, grades, bar schedules, stirrup spacing, bent bar diagrams, bar arrangement, location of splices, lengths of lap splices, details of mechanical splice couplers, details of welding splices, tie spacing, hoop spacing, and supports for concrete reinforcement.
3. For structural thermal break insulated connection system, indicate general configuration, insulation dimensions, tension bars, compression pads, shear bars, and dimensions.

G. Construction Joint Layout: Indicate proposed construction joints required to build the structure.

1. Location of construction joints is subject to approval of the Director's Representative.

H. Qualification Statements: For testing and inspection agency.

I. Welding certificates.

1. Reinforcement To Be Welded: Welding procedure specification in accordance with AWS D1.4

J. Material Certificates: For each of the following, signed by manufacturers:

1. Epoxy-Coated Reinforcement: CRSI's "Epoxy Coating Plant Certification."
2. Dual-Coated Reinforcement: CRSI's "Epoxy Coating Plant Certification."
3. Documentation to confirm compliance with General Conditions Article 25.4 Domestic Steel.

K. Material Test Reports: For the following, from a qualified testing agency:

1. Steel Reinforcement:

a. For reinforcement to be welded, mill test analysis for chemical composition and carbon equivalent of the steel in accordance with ASTM A706.

2. Mechanical splice couplers.

L. Field quality-control reports.

M. Minutes of preinstallation conference.

1.5 QUALITY ASSURANCE

A. Testing Agency Qualifications: An independent agency, acceptable to authorities having jurisdiction, qualified in accordance with ASTM C1077 and ASTM E329 for testing indicated.

B. Welding Qualifications: Qualify procedures and personnel in accordance with AWS D1.4.

C. Mockups: Reinforcing for cast-concrete formed surfaces, to demonstrate tolerances and standard of workmanship.

1. Build panel approximately 100 sq. ft. for formed surface in the location indicated on Drawings or, if not indicated, as directed by Director's Representative.
2. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

D. If the value of the contract exceeds $100,000 all structural steel, reinforcing steel and other major steel items to be incorporated in the Work of this Contract shall be produced and made in whole or substantial part in the United States, its territories or possessions.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Steel Reinforcement: Deliver, store, and handle steel reinforcement to prevent bending and damage and to avoid damaging coatings on steel reinforcement.

1. Store reinforcement to avoid contact with earth.
2. Do not allow epoxy-coated reinforcement to be stored outdoors for more than 60 days without being stored under an opaque covering.
3. Do not allow dual-coated reinforcement to be stored outdoors for more than 60 days without being stored under an opaque covering.
4. Do not allow stainless steel reinforcement to come into contact with uncoated reinforcement.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Structural Performance of Structural Thermal Break Insulating Connection System: Structural thermal break insulated connection system shall withstand the following loads and stresses:

1. Dead Loads: As indicated on Drawings.

a. Shear Load: As indicated on Drawings.
b. Bending Moment: As indicated on Drawings.

2. Live Loads: As indicated on Drawings.

a. Shear Load: As indicated on Drawings.
b. Bending Moment: As indicated on Drawings.

2.2 STEEL REINFORCEMENT

A. Reinforcing Bars: ASTM A615, Grade 60, deformed.

B. Low-Alloy Steel Reinforcing Bars: ASTM A706, deformed.

C. Headed-Steel Reinforcing Bars: ASTM A970.

D. Galvanized Reinforcing Bars:

1. Steel Bars: ASTM A615, Grade 60, deformed bars.
2. Zinc Coating: ASTM A767, [Class I] zinc coated after fabrication and bending.

E. Epoxy-Coated Reinforcing Bars:

1. Steel Bars: ASTM A615, Grade 60, deformed bars.
2. Epoxy Coating: ASTM A775 with less than 2 percent damaged coating in each 12-inch bar length.

F. Dual-Coated Reinforcing Bars: ASTM A1055.

1. Steel Bars: ASTM A615, Grade 60, deformed bars.
2. Zinc Coating: ASTM A1055 Type I.
3. Epoxy Coating: ASTM A775 with less than 2 percent damaged coating in each 12-inch bar length.

G. Plain-Steel Welded-Wire Reinforcement: ASTM A1064, plain, fabricated from as-drawn steel wire into flat sheets.

H. Deformed-Steel Welded-Wire Reinforcement: ASTM A1064, flat sheet.

I. Galvanized-Steel Welded-Wire Reinforcement: ASTM A1064, plain, fabricated from galvanized-steel wire into flat sheets.

J. Epoxy-Coated Welded-Wire Reinforcement: ASTM A884, Class A coated, Type 1, deformed steel.

2.3 REINFORCEMENT ACCESSORIES

A. Joint Dowel Bars: ASTM A615, Grade 60, plain-steel bars, cut true to length with ends square and free of burrs.

B. Epoxy-Coated Joint Dowel Bars: ASTM A615, Grade 60, plain-steel bars, ASTM A775 epoxy coated.

C. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded-wire reinforcement in place.

1. Manufacture bar supports from steel wire, plastic, or precast concrete in accordance with CRSI's "Manual of Standard Practice," of greater compressive strength than concrete and as follows:

    a. For concrete surfaces exposed to view, where legs of wire bar supports contact forms, use CRSI Class 1 plastic-protected steel wire, all-plastic bar supports, or CRSI Class 2 stainless steel bar supports.
    b. For epoxy-coated reinforcement, use CRSI Class 1A epoxy-coated or other dielectric-polymer-coated wire bar supports.
    c. For dual-coated reinforcement, use CRSI Class 1A epoxy-coated or other dielectric-polymer-coated wire bar supports.
    d. For zinc-coated reinforcement, use galvanized wire or dielectric-polymer-coated wire bar supports.
    e. For stainless steel reinforcement, use CRSI Class 1 plastic-protected steel wire, all-plastic bar supports, or CRSI Class 2 stainless steel bar supports.

D. Stainless Steel Tie Wire: ASTM A1022, not less than 0.0508 inch in diameter.

E. Epoxy Repair Coating: Liquid, two-part, epoxy repair coating; compatible with epoxy coating on reinforcement and complying with ASTM A775.

F. Zinc Repair Material: ASTM A780.

2.4 FABRICATING REINFORCEMENT

A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

PART 3 - EXECUTION

3.1 PREPARATION

A. Protection of In-Place Conditions:

1. Do not cut or puncture vapor retarder.
2. Repair damage and reseal vapor retarder before placing concrete.

B. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials that reduce bond to concrete.

3.2 INSTALLATION OF STEEL REINFORCEMENT

A. Comply with CRSI's "Manual of Standard Practice" for placing and supporting reinforcement.

B. Accurately position, support, and secure reinforcement against displacement.

1. Locate and support reinforcement with bar supports to maintain minimum concrete cover.
2. Do not tack weld crossing reinforcing bars.

C. Preserve clearance between bars of not less than 1 inch, not less than one bar diameter, or not less than 1-1/3 times size of large aggregate, whichever is greater.

D. Provide concrete coverage in accordance with ACI 318.

E. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.

F. Splices: Lap splices as indicated on Drawings.

1. Bars indicated to be continuous, and all vertical bars shall be lapped not less than 36 bar diameters at splices, or 24 inches, whichever is greater.
2. Stagger splices in accordance with ACI 318.
3. Mechanical Splice Couplers: Install in accordance with manufacturer's instructions.
4. Weld reinforcing bars in accordance with AWS D1.4, where indicated on Drawings.

G. Install structural thermal break insulated connection system in accordance with manufacturer's instructions.

H. Install welded-wire reinforcement in longest practicable lengths.

1. Support welded-wire reinforcement in accordance with CRSI "Manual of Standard Practice."

a. For reinforcement less than W4.0 or D4.0, continuous support spacing shall not exceed 12 inches.

2. Lap edges and ends of adjoining sheets at least one wire spacing plus 2 inches for plain wire and 8 inches for deformed wire.
3. Offset laps of adjoining sheet widths to prevent continuous laps in either direction.
4. Lace overlaps with wire.

I. Epoxy-Coated Reinforcement: Repair cut and damaged epoxy coatings with epoxy repair coating in accordance with ASTM D3963.

J. Dual-Coated Reinforcement: Repair cut and damaged epoxy coatings with epoxy repair coating in accordance with ASTM D3963.

K. Zinc-Coated Reinforcement: Repair cut and damaged zinc coatings with zinc repair material in accordance with ASTM A780.

3.3 JOINTS

A. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Director’s Representative.

1. Place joints perpendicular to main reinforcement.
2. Continue reinforcement across construction joints unless otherwise indicated.
3. Do not continue reinforcement through sides of strip placements of floors and slabs.

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

3.4 INSTALLATION TOLERANCES

A. Comply with ACI 117.

3.5 FIELD QUALITY CONTROL

A. Special Inspections: Director's Representative will engage a special inspector and a qualified testing agency to perform tests and inspections in accordance with the requirements of BDC 406 Summary of Special Inspections and BDC 406.1 Statement of Special Inspections and as directed by the Code Compliance Manager.

END OF SECTION 032000

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.

B. Related Requirements:

1. Section 031000 "Concrete Forming and Accessories" for form-facing materials, form liners, insulating concrete forms, and waterstops.
2. Section 032000 "Concrete Reinforcing" for steel reinforcing bars and welded-wire reinforcement.

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 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1. Require representatives of each entity directly concerned with cast-in-place concrete 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 Subcontractor.
e. Special concrete finish Subcontractor.

2. Review the following:

a. Special inspection and testing and inspecting agency procedures for field quality control.
b. Construction joints, control joints, isolation joints, and joint-filler strips.
c. Semirigid joint fillers.
d. Vapor-retarder installation.

e. Anchor rod and anchorage device installation tolerances.
f. Cold and hot weather concreting procedures.
g. Concrete finishes and finishing.
h. Curing procedures.
i. Forms and form-removal limitations.
j. Shoring and reshoring procedures.
k. Methods for achieving specified floor and slab flatness and levelness.
l. Floor and slab flatness and levelness measurements.
m. Concrete repair procedures.
n. Concrete protection.
o. Initial curing and field curing of field test cylinders (ASTM C31)
p. Protection of field cured field test cylinders.

1.4 SUBMITTALS

A. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Manufacturer's installation instructions shall be provided along with product data.

C. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).

D. General: Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

E. Product Data: For each of the following.

1. Portland cement.
2. Fly ash.
3. Slag cement.
4. Blended hydraulic cement.
5. Silica fume.
6. Performance-based hydraulic cement
7. Aggregates.
8. Admixtures:

    a. Include limitations of use, including restrictions on cementitious materials, supplementary cementitious materials, air entrainment, aggregates, temperature at time of concrete placement, relative humidity at time of concrete placement, curing conditions, and use of other admixtures.

9. Fiber reinforcement.
10. Vapor retarders.
11. Floor and slab treatments.
12. Curing materials.

    a. Include documentation from color pigment manufacturer, indicating that proposed methods of curing are recommended by color pigment manufacturer.

13. Joint fillers.
14. Repair materials.

F. Submit an Environmental Product Declaration (EPD) from the manufacturer for each concrete mix within this specification section, if available. A statement of the contractor's good faith effort to obtain the EPD shall be provided if not available.

1. Manufacturer-provided EPDs must be Product Specific Type III (Third-Party Reviewed), in adherence with ISO 14025 *Environmental labels and declarations*, ISO 14044 *Environmental management – Life cycle assessment*, and ISO 21930 *Core rules for environmental product declarations of construction products and services*.

G. Design Mixtures: For each concrete mixture, include the following:

1. Mixture identification.
2. Minimum 28-day compressive strength.
3. Durability exposure class.
4. Maximum w/cm.
5. Calculated equilibrium unit weight, for lightweight concrete.
6. Slump limit.
7. Air content.
8. Nominal maximum aggregate size.
9. Steel-fiber reinforcement content.
10. Synthetic micro-fiber content.
11. Indicate amounts of mixing water to be withheld for later addition at Project site if permitted.
12. Include manufacturer's certification that permeability-reducing admixture is compatible with mix design.
13. Include certification that dosage rate for permeability-reducing admixture matches dosage rate used in performance compliance test.
14. Intended placement method.
15. Submit alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.

H. Shop Drawings:

1. Construction Joint Layout: Indicate proposed construction joints required to construct the structure.

a. Location of construction joints is subject to approval of the Director's Representative.

I. Samples: For vapor retarder.

J. Concrete Schedule: For each location of each Class of concrete indicated in "Concrete Mixtures" Article, including the following:

1. Concrete Class designation.
2. Location within Project.
3. Exposure Class designation.
4. Formed Surface Finish designation and final finish.

5. Final finish for floors.
6. Curing process.
7. Floor treatment if any.

K. Qualification Data: For the following:

1. Installer: Include copies of applicable ACI certificates.
2. Ready-mixed concrete manufacturer.
3. Testing agency: Include copies of applicable ACI certificates.

L. Material Certificates: For each of the following, signed by manufacturers:

1. Cementitious materials.
2. Admixtures.
3. Fiber reinforcement.
4. Curing compounds.
5. Floor and slab treatments.
6. Bonding agents.
7. Adhesives.
8. Vapor retarders.
9. Semirigid joint filler.
10. Joint-filler strips.
11. Repair materials.

M. Material Test Reports: For the following, from a qualified testing agency:

1. Portland cement.
2. Fly ash.
3. Slag cement.
4. Blended hydraulic cement.
5. Silica fume.
6. Performance-based hydraulic cement.
7. Aggregates.
8. Admixtures:

    a. Permeability-Reducing Admixture: Include independent test reports, indicating compliance with specified requirements, including dosage rate used in test.

N. Floor surface flatness and levelness measurements report, indicating compliance with specified tolerances.

O. Research Reports:

1. For concrete admixtures in accordance with UNIFORM CODE's Acceptance Criteria AC198.
2. For sheet vapor retarder/termite barrier, showing compliance with UNIFORM CODE AC380.

P. Preconstruction Test Reports: For each mix design.

Q. Field quality-control reports.

R. Minutes of preinstallation conference.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: A qualified installer who employs Project personnel qualified as an ACI-certified Flatwork Technician and Finisher and a supervisor who is a certified ACI Flatwork Concrete Finisher/Technician or an ACI Concrete Flatwork Technician with experience installing and finishing concrete, incorporating permeability-reducing admixtures.

1. Post-Installed Concrete Anchors Installers: ACI-certified Adhesive Anchor Installer.

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

1. Manufacturer certified in accordance with NRMCA's "Certification of Ready Mixed Concrete Production Facilities."

C. Laboratory Testing Agency Qualifications: A testing agency qualified in accordance with ASTM C1077 and ASTM E329 for testing indicated and employing an ACI-certified Concrete Quality Control Technical Manager.

1. Personnel performing laboratory tests shall be an ACI-certified Concrete Strength Testing Technician and Concrete Laboratory Testing Technician, Grade I. Testing agency laboratory supervisor shall be an ACI-certified Concrete Laboratory Testing Technician, Grade II.

D. Field Quality Control Testing Agency Qualifications: An independent agency, acceptable to authorities having jurisdiction, qualified in accordance with ASTM C1077 and ASTM E329 for testing indicated.

1. Personnel conducting field tests shall be qualified as an ACI Concrete Field Testing Technician, Grade 1, in accordance with ACI CPP 610.1 or an equivalent certification program.

E. Mockups: Cast concrete slab-on-ground panels to demonstrate typical joints, surface finish, texture, tolerances, floor treatments, and standard of workmanship.

1. Slab-On-Ground: Build panel approximately 15 feet by 15 feet in the location indicated or, if not indicated, as directed by Director’s Representative.

a. Divide panel into four equal panels to demonstrate saw joint cutting.

2. Formed Surfaces: Build panel approximately 100 sq. ft. in the location indicated or, if not indicated, as directed by Director’s Representative.
3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.6 PRECONSTRUCTION TESTING

A. Preconstruction Testing Service: Engage a qualified testing agency to perform preconstruction testing on each concrete mixture.

1. Include the following information in each test report:

a. Admixture dosage rates.
b. Slump.
c. Air content.
d. Seven-day compressive strength.
e. 28-day compressive strength.
f. Permeability.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Comply with ASTM C94 and ACI 301.

1.8 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 301unless modified by requirements in the Contract Documents.

2.2 CONCRETE MATERIALS

A. Source Limitations:

1. Obtain all concrete mixtures from a single ready-mixed concrete manufacturer for entire Project.
2. Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant.
3. Obtain aggregate from single source.
4. Obtain each type of admixture from single source from single manufacturer.

B. Cementitious Materials:

1. Portland Cement: ASTM C150, Type I or Type II**,** gray.
2. Fly Ash: ASTM C618, Class F.

C. Normal-Weight Aggregates: ASTM C33, Class 3S coarse aggregate or better, graded. Provide aggregates from a single source.

1. Alkali-Silica Reaction: Comply with one of the following:

a. Expansion Result of Aggregate: Not more than 0.04 percent at one-year when tested in accordance with ASTM C1293.
b. Expansion Results of Aggregate and Cementitious Materials in Combination: Not more than 0.10 percent at an age of 16 days when tested in accordance with ASTM C1567.
c. Alkali Content in Concrete: Not more than 4 lb./cu. yd. for moderately reactive aggregate or 3 lb./cu. yd. for highly reactive aggregate, when tested in accordance with ASTM C1293 and categorized in accordance with ASTM C1778, based on alkali content being calculated in accordance with ACI 301.

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

D. Air-Entraining Admixture: ASTM C260.

E. Chemical Admixtures: Certified by manufacturer to be compatible with other admixtures that do not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride in steel-reinforced concrete.

1. Water-Reducing Admixture: ASTM C494, Type A.
2. Retarding Admixture: ASTM C494, Type B.
3. Water-Reducing and -Retarding Admixture: ASTM C494, Type D.
4. High-Range, Water-Reducing Admixture: ASTM C494, Type F.
5. High-Range, Water-Reducing and -Retarding Admixture: ASTM C494, Type G.
6. Plasticizing and Retarding Admixture: ASTM C1017, Type II.
7. Set-Accelerating Corrosion-Inhibiting Admixture: Commercially formulated, anodic inhibitor or mixed cathodic and anodic inhibitor; capable of forming a protective barrier and minimizing chloride reactions with steel reinforcement in concrete and complying with ASTM C494, Type C.

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

1) BASF Corporation.
2) Euclid Chemical Company (The); an RPM company.
3) GCP Applied Technologies Inc.
4) Sika Corporation.
5) Approved equivalent.

8. Non-Set-Accelerating Corrosion-Inhibiting Admixture: Commercially formulated, non-set-accelerating, anodic inhibitor or mixed cathodic and anodic inhibitor; capable of forming a protective barrier and minimizing chloride reactions with steel reinforcement in concrete.

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

1) Aggregate Industries (US); Lafarge.
2) Barrier-Bac; Inteplast Group.
3) BASF Corporation.
4) Sika Corporation.
5) Approved equivalent.

9. Permeability-Reducing Admixture: ASTM C494, Type S, hydrophilic, permeability-reducing crystalline admixture, capable of reducing water absorption of concrete exposed to hydrostatic pressure (PRAH).

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

1) AQUAFIN, Inc.
2) Kryton International Inc.
3) Xypex Chemical Corporation.
4) Approved equivalent.

b. Permeability: No leakage when tested in accordance with U.S. Army Corps of Engineers CRD C48 at a hydraulic pressure of 200 psi for 14 days.

F. Water and Water Used to Make Ice: ASTM C94, potable

2.3 FIBER REINFORCEMENT

A. Synthetic Macro/Micro-Fiber Blend: Synthetic macro/micro-fibers engineered and designed for use in concrete, complying with ASTM C1116, Type III, 1 to 2-1/4 inches long.

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. Euclid Chemical Company (The); an RPM company.
    b. FiberForce; ABC Polymer Industries, LLC.
    c. GCP Applied Technologies Inc.
    d. Propex Operating Company, LLC.
    e. Sika Corporation.
    f. Approved equivalent.

2.4 VAPOR RETARDERS

A. Sheet Vapor Retarder, Class A: ASTM E1745, Class A; not less than 10 mils thick. Include manufacturer's recommended adhesive or pressure-sensitive tape.

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. Barrier-Bac; Inteplast Group.
    b. ISI Building Products.
    c. Raven Industries, Inc.
    d. Reef Industries, Inc.
    e. Stego Industries, LLC.
    f. Approved equivalent.

B. Sheet Vapor Retarder, Class C: ASTM E1745, Class C, except with maximum water-vapor permeance of; not less than 10 mils thick. Include manufacturer's recommended adhesive or pressure-sensitive joint tape.

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. ISI Building Products.
    b. Stego Industries, LLC.
    c. Tex-Trude.
    d. Approved equivalent.

C. Sheet Vapor Retarder/Termite Barrier: ASTM E1745, Class A, except with maximum water-vapor permeance of 0.03 perms; complying with UNIFORM CODE AC380. Include manufacturer's recommended adhesive or pressure-sensitive tape.

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. Polyguard Products, Inc.
    b. approved equivalent.

2. Low-Temperature Flexibility: Pass at minus 15 deg F; ASTM D146.
3. Puncture Resistance: 224 lbf minimum; ASTM E154.
4. Water Absorption: 0.1 percent weight-gain maximum after 48-hour immersion at 70 deg F; ASTM D570.
5. Hydrostatic-Head Resistance: 231 feet minimum; ASTM D5385.

2.5 LIQUID FLOOR TREATMENTS

A. Penetrating Liquid Floor Treatment: Clear, chemically reactive, waterborne solution of inorganic silicate or siliconate materials and proprietary components; odorless; that penetrates, hardens, and densifies concrete surfaces.

2.6 CURING MATERIALS

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

B. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. when dry.

C. Moisture-Retaining Cover: ASTM C171, polyethylene film burlap-polyethylene sheet.

1. Color:

a. Ambient Temperature Below 50 deg F: Black.
b. Ambient Temperature between 50 deg F and 85 deg F: Any color.
c. Ambient Temperature Above 85 deg F: White.

D. Curing Paper: Eight-feet- wide paper, consisting of two layers of fibered kraft paper laminated with double coating of asphalt.

E. Water: Potable or complying with ASTM C1602.

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

G. Clear, Waterborne, Membrane-Forming, Nondissipating Curing Compound: ASTM C309, Type 1, Class B, certified by curing compound manufacturer to not interfere with bonding of floor covering.

H. Clear, Waterborne, Membrane-Forming, Curing Compound: ASTM C309, Type 1, Class B, 18 to 25 percent solids, nondissipating, certified by curing compound manufacturer to not interfere with bonding of floor covering.

I. Clear, Solvent-Borne, Membrane-Forming, Curing and Sealing Compound: ASTM C1315, Type 1, Class A.

J. Clear, Waterborne, Membrane-Forming, Curing and Sealing Compound: ASTM C1315, Type 1, Class A.

2.7 RELATED MATERIALS

A. Expansion- and Isolation-Joint-Filler Strips: ASTM D1751, asphalt-saturated cellulosic fiber or ASTM D1752, cork or self-expanding cork.

B. Bonding Agent: ASTM C1059, Type II, nonredispersible, acrylic emulsion or styrene butadiene.

C. Floor Slab Protective Covering: Eight-feet- wide cellulose fabric.

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. McTech Group, Inc.
    b. approved equivalent.

2.8 REPAIR MATERIALS

A. Repair Underlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/8 inch and that can be feathered at edges to match adjacent floor elevations.

1. Cement Binder: ASTM C150 portland cement or hydraulic or blended hydraulic cement, as defined in ASTM C219.
2. Primer: Product of underlayment manufacturer recommended for substrate, conditions, and application.
3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch or coarse sand, as recommended by underlayment manufacturer.
4. Compressive Strength: Not less than 4100 psi at 28 days when tested in accordance with ASTM C109.

B. Repair Overlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/4 inch and that can be filled in over a scarified surface to match adjacent floor elevations.

1. Cement Binder: ASTM C150 portland cement or hydraulic or blended hydraulic cement, as defined in ASTM C219.
2. Primer: Product of topping manufacturer recommended for substrate, conditions, and application.
3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch or coarse sand as recommended by topping manufacturer.
4. Compressive Strength: Not less than 5000 psi at 28 days when tested in accordance with ASTM C109.

2.9 CONCRETE MIXTURES, GENERAL

A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, in accordance with ACI 301.

1. Use a qualified testing agency for preparing and reporting proposed mixture designs, based on laboratory trial mixtures.

B. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than portland cement in concrete as follows:

1. Fly Ash or Other Pozzolans: 25 percent by mass.
2. Slag Cement: 50 percent by mass.
3. Silica Fume: 10 percent by mass.
4. Total of Fly Ash or Other Pozzolans, Slag Cement, and Silica Fume: 50 percent by mass, with fly ash or pozzolans not exceeding 25 percent by mass and silica fume not exceeding 10 percent by mass.
5. Total of Fly Ash or Other Pozzolans and Silica Fume: 35 percent by mass with fly ash or pozzolans not exceeding 25 percent by mass and silica fume not exceeding 10 percent by mass.

C. Admixtures: Use admixtures in accordance with 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.
3. Use water-reducing admixture in pumped concrete,.
4. Use corrosion-inhibiting admixture in concrete mixtures where indicated.
5. Use permeability-reducing admixture in concrete mixtures where indicated.

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

2.10 CONCRETE MIXTURES

A. Class F2: Normal-weight concrete used for footings, foundation walls, entry apron slabs, equipment pads, retaining walls, and bollard foundations.

1. Exposure Class: ACI 318 F2.
2. Minimum Compressive Strength: 4500 psi at 28 days.
3. Maximum w/cm: 0.45.
4. Slump Limit: 8 inches, plus or minus 1 inch for concrete with verified slump of 3 inches plus or minus 1 inch before adding high-range water-reducing admixture or plasticizing admixture at Project site.
5. Slump Flow Limit: 30 inches, plus or minus 2.5 inches.
6. Air Content:

    a. Exposure Classes F2: 6 percent, plus or minus 1.5 percent at point of delivery for concrete containing 3/4-inch nominal maximum aggregate size.

7. Limit water-soluble, chloride-ion content in hardened concrete to 0.15 percent by weight of cement.

B. Class C2: Normal-weight concrete used for interior slabs-on-ground and slab on metal deck.

1. Exposure Class: ACI 318 C2.
2. Minimum Compressive Strength: 4500 psi at 28 days.
3. Maximum w/cm: 0.45.
4. Slump Limit: 8 inches, plus or minus 1 inch for concrete with verified slump of 3 inches plus or minus 1 inch before adding high-range water-reducing admixture or plasticizing admixture at Project site.
5. Slump Flow Limit: 30 inches, plus or minus 2.5 inches.
6. Air Content:

    a. Do not use an air-entraining admixture or allow total air content to exceed 3 percent for concrete used in trowel-finished floors.

7. Limit water-soluble, chloride-ion content in hardened concrete to 0.30 percent by weight of cement.

2.11 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete in accordance with ASTM C94 and ASTM C1116, and furnish batch ticket information.

B. Project-Site Mixing: Measure, batch, and mix concrete materials and concrete in accordance with ASTM C94. Mix concrete materials in appropriate drum-type batch machine mixer.

1. For mixer capacity of 1 cu. yd. or smaller, continue mixing at least 1-1/2 minutes, but not more than five minutes after ingredients are in mixer, before any part of batch is released.
2. For mixer capacity 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, mixture time, quantity, and amount of water added. Record approximate location of final deposit in structure.

2.12 GLOBAL WARMING POTENTIAL LIMITS

A. The Global Warming Potential (GWP) of standard ready-mix concrete mixes shall meet the maximum limits outlined in in the table below. GWP of each mix will be verified through the submission of an EPD.

Maximum Global Warming Potential (GWP) Limits

for Low Embodied Carbon Concrete

Specified compressive strength (f'c in PSI)	Maximum Global Warming Potential Limits for Low Embodied Carbon Concrete (kilograms of carbon dioxide equivalent per cubic yard - CO_2e kg/y^3)
0 - 2500	275
2501 - 3000	302
3001 - 4000	360

4001 - 5000	434
5001 - 6000	458
6001 - 8000	541
8000+	N/A

B. The maximum GWP limits are not applicable to quick cure concrete, concrete designed to cure to its design strength quicker than the standard 28 days.

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 INSTALLATION OF VAPOR RETARDER

A. Sheet Vapor Retarders: Place, protect, and repair sheet vapor retarder in accordance with ASTM E1643 and manufacturer's written instructions.

1. Install vapor retarder with longest dimension parallel with direction of concrete pour.
2. Face laps away from exposed direction of concrete pour.
3. Lap vapor retarder over footings and grade beams not less than 6 inches, sealing vapor retarder to concrete.
4. Lap joints 6 inches and seal with manufacturer's recommended tape.
5. Terminate vapor retarder at the top of floor slabs, grade beams, and pile caps, sealing entire perimeter to floor slabs, grade beams, foundation walls, or pile caps.
6. Seal penetrations in accordance with vapor retarder manufacturer's instructions.
7. Protect vapor retarder during placement of reinforcement and concrete.

    a. Repair damaged areas by patching with vapor retarder material, overlapping damages area by 6 inches on all sides, and sealing to vapor retarder.

B. Bituminous Vapor Retarders: Place, protect, and repair bituminous vapor retarder in accordance with manufacturer's written instructions.

3.5 JOINTStt

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 Director’s Representative.
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. Unless otherwise indicated on Drawings, locate vertical joints beside piers integral with walls, near corners, and in concealed locations where possible.
7. Use a bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
8. Use epoxy-bonding adhesive at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.

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 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.

3.6 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 Director’s Representative 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 Director’s Representative 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. Conform to the discharge limitations and requirements of ASTM C94 in the operation of truck mixers and agitators.

F. 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. Do not allow discharged concrete to freefall more than 4 feet.
5. 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.

G. 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.

H. Pumping Concrete

1. When pumping concrete, the lubrication materials within the delivery line shall not be discharged into the forms.
2. The inside diameter of the delivery lines shall be the greater of 5 inches or 3 times the maximum size of the coarse aggregate.

3.7 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.

2. ACI 301Surface 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, or to be covered with a coating or covering material applied directly to concrete.

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 field sample panels mockups.

2. 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.

3.8 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.

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.

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.
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 1/8 inch
2) Specified overall values of flatness, FF 25; and of levelness, FL 20; with minimum local values of flatness, FF 17; and of levelness, FL 15.
3) Specified overall values of flatness, FF 35; and of levelness, FL 25; with minimum local values of flatness, FF 24; and of levelness, FL 17.
4) Specified overall values of flatness, FF 45; and of levelness, FL 35; with minimum local values of flatness, FF 30; and of levelness, FL 24.

5) Specified Overall Value (SOV): FF 50 and FL 25 with minimum local value (MLV): FF 40 and FL 17.
6) Specified Overall Value (SOV): FF 25 and FL 20 with minimum local value (MLV): FF 17 and FL 15.

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 1/8 inch.
2) Specified overall values of flatness, FF 25; and of levelness, FL 20; with minimum local values of flatness, FF 17; and of levelness, FL 15.
3) Specified overall values of flatness, FF 35; and of levelness, FL 20; with minimum local values of flatness, FF 24; and of levelness, FL 15.
4) Specified overall values of flatness, FF 45; and of levelness, FL 35; with minimum local values of flatness, FF 30; and of levelness, FL 24.

E. Broom Finish: Apply a broom finish to exterior concrete

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 Director's Representative before application.

3.9 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. 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.

3.10 CONCRETE CURING

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

1. Comply with ACI 301 and ACI 306.1 for cold weather protection during curing.
2. Comply with ACI 301 and ACI 305.1 for hot-weather protection during curing.
3. Maintain moisture loss no more than 0.2 lb/sq. ft. x h before and during finishing operations.

B. Curing Formed Surfaces: Comply with ACI 308.1 as follows:

1. Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces.
2. Cure concrete containing color pigments in accordance with color pigment manufacturer's instructions.
3. If forms remain during curing period, moist cure after loosening forms.
4. If removing forms before end of curing period, continue curing for remainder of curing period, as follows:

    a. Continuous Fogging: Maintain standing water on concrete surface until final setting of concrete.
    b. Continuous Sprinkling: Maintain concrete surface continuously wet.
    c. Absorptive Cover: Pre-dampen absorptive material before application; apply additional water to absorptive material to maintain concrete surface continuously wet.
    d. Water-Retention Sheeting Materials: Cover exposed concrete surfaces with sheeting material, taping, or lapping seams.
    e. Membrane-Forming Curing Compound: Apply uniformly in continuous operation by power spray or roller in accordance with manufacturer's written instructions.

        1) Recoat areas subject to heavy rainfall within three hours after initial application.
        2) Maintain continuity of coating and repair damage during curing period.

C. Curing Unformed Surfaces: Comply with ACI 308.1 as follows:

1. Begin curing immediately after finishing concrete.
2. Interior Concrete Floors:

    a. Floors to Receive Floor Coverings Specified in Other Sections: Contractor has option of the following:

        1) Absorptive Cover: As soon as concrete has sufficient set to permit application without marring concrete surface, install prewetted absorptive cover over entire area of floor.

            a) Lap edges and ends of absorptive cover not less than 12-inches.
            b) Maintain absorptive cover water saturated, and in place, for duration of curing period, but not less than seven days.

        2) Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive.

            a) Immediately repair any holes or tears during curing period, using cover material and waterproof tape.
            b) Cure for not less than seven days.

3) Ponding or Continuous Sprinkling of Water: Maintain concrete surfaces continuously wet for not less than seven days, utilizing one, or a combination of, the following:

a) Water.
b) Continuous water-fog spray.

b. Floors to Receive Polished Finish: Contractor has option of the following:

1) Absorptive Cover: As soon as concrete has sufficient set to permit application without marring concrete surface, install prewetted absorptive cover over entire area of floor.

a) Lap edges and ends of absorptive cover not less than 12 inches.
b) Maintain absorptive cover water saturated, and in place, for duration of curing period, but not less than seven days.

2) Ponding or Continuous Sprinkling of Water: Maintain concrete surfaces continuously wet for not less than seven days, utilizing one, or a combination of, the following:

a) Water.
b) Continuous water-fog spray.

c. Floors to Receive Curing Compound:

1) Apply uniformly in continuous operation by power spray or roller in accordance with manufacturer's written instructions.
2) Recoat areas subjected to heavy rainfall within three hours after initial application.
3) Maintain continuity of coating, and repair damage during curing period.
4) Removal: After curing period has elapsed, remove curing compound without damaging concrete surfaces by method recommended by curing compound manufacturer

3.11 TOLERANCES

A. Conform to ACI 117.

3.12 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.

3.13 CONCRETE SURFACE REPAIRS

A. Defective Concrete:

1. Repair and patch defective areas when approved by Director's Representative.
2. Remove and replace concrete that cannot be repaired and patched to Director's Representative's approval.

B. Patching Mortar: Mix dry-pack patching mortar, consisting of 1 part portland cement to 2-1/2 parts fine aggregate passing a No. 16 sieve, using only enough water for handling and placing.

C. Repairing Formed Surfaces: Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycombs, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning.

1. Immediately after form removal, cut out honeycombs, rock pockets, and voids more than 1/2 inch in any dimension to solid concrete.

    a. Limit cut depth to 3/4 inch.
    b. Make edges of cuts perpendicular to concrete surface.
    c. Clean, dampen with water, and brush-coat holes and voids with bonding agent.
    d. Fill and compact with patching mortar before bonding agent has dried.
    e. Fill form-tie voids with patching mortar or cone plugs secured in place with bonding agent.

2. Repair defects on surfaces exposed to view by blending white portland cement and standard portland cement, so that, when dry, patching mortar matches surrounding color.

    a. Patch a test area at inconspicuous locations to verify mixture and color match before proceeding with patching.
    b. Compact mortar in place and strike off slightly higher than surrounding surface.

3. Repair defects on concealed formed surfaces that will affect concrete's durability and structural performance as determined by Director's Representative.

D. Repairing Unformed Surfaces:

1. Test unformed surfaces, such as floors and slabs, for finish, and verify surface tolerances specified for each surface.

    a. Correct low and high areas.
    b. Test surfaces sloped to drain for trueness of slope and smoothness; use a sloped template.

2. Repair finished surfaces containing surface defects, including spalls, popouts, honeycombs, rock pockets, crazing, and cracks in excess of 0.01 inch wide or that penetrate

to reinforcement or completely through unreinforced sections regardless of width, and other objectionable conditions.

3. After concrete has cured at least 14 days, correct high areas by grinding.
4. Correct localized low areas during, or immediately after, completing surface-finishing operations by cutting out low areas and replacing with patching mortar.

    a. Finish repaired areas to blend into adjacent concrete.

5. Correct other low areas scheduled to receive floor coverings with a repair underlayment.

    a. Prepare, mix, and apply repair underlayment and primer in accordance with manufacturer's written instructions to produce a smooth, uniform, plane, and level surface.
    b. Feather edges to match adjacent floor elevations.

6. Correct other low areas scheduled to remain exposed with repair topping.

    a. Cut out low areas to ensure a minimum repair topping depth of 1/4 inch to match adjacent floor elevations.
    b. Prepare, mix, and apply repair topping and primer in accordance with manufacturer's written instructions to produce a smooth, uniform, plane, and level surface.

7. Repair defective areas, except random cracks and single holes 1 inch or less in diameter, by cutting out and replacing with fresh concrete.

    a. Remove defective areas with clean, square cuts, and expose steel reinforcement with at least a 3/4-inch clearance all around.
    b. Dampen concrete surfaces in contact with patching concrete and apply bonding agent.
    c. Mix patching concrete of same materials and mixture as original concrete, except without coarse aggregate.
    d. Place, compact, and finish to blend with adjacent finished concrete.
    e. Cure in same manner as adjacent concrete.

8. Repair random cracks and single holes 1 inch or less in diameter with patching mortar.

    a. Groove top of cracks and cut out holes to sound concrete, and clean off dust, dirt, and loose particles.
    b. Dampen cleaned concrete surfaces and apply bonding agent.
    c. Place patching mortar before bonding agent has dried.
    d. Compact patching mortar and finish to match adjacent concrete.
    e. Keep patched area continuously moist for at least 72 hours.

E. Perform structural repairs of concrete, subject to Director’s Representative's approval, using epoxy adhesive and patching mortar.

F. Repair materials and installation not specified above may be used, subject to Director’s Representative's approval.

3.14 FIELD QUALITY CONTROL

A. Special Inspections: Director's Representative will engage a special inspector and a qualified testing agency to perform tests and inspections in accordance with the requirements of BDC 406 Summary of Special Inspections and BDC 406.1 Statement of Special Inspections and as directed by the Code Compliance Manager.

B. Concrete Tests: Testing of composite samples of fresh concrete obtained in accordance with ASTM C 172 shall be performed in accordance with the following requirements:

1. Testing Frequency: Obtain one composite sample for each day's pour of each concrete mixture exceeding 5 cu. yd., but less than 25 cu. yd., plus one set for each additional 50 cu. yd. or fraction thereof.

    a. When frequency of testing provides 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:

    a. 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.
    b. Perform additional tests when concrete consistency appears to change.

3. Slump Flow: ASTM C1611:

    a. 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.
    b. Perform additional tests when concrete consistency appears to change.

4. Air Content: ASTM C231 pressure method, for normal-weight concrete

    a. One test for each composite sample, but not less than one test for each day's pour of each concrete mixture.

5. Concrete Temperature: ASTM C1064:

    a. One test hourly when air temperature is 40 deg F and below or 80 deg F and above, and one test for each composite sample.

6. Unit Weight: ASTM C567 fresh unit weight of structural lightweight concrete.

    a. One test for each composite sample, but not less than one test for each day's pour of each concrete mixture.

7. Compression Test Specimens: ASTM C31:

    a. Cast and laboratory cure two sets of four 6-inch by 12-inch or 4-inch by 8-inch cylinder specimens for each composite sample.

b. Cast, initial cure, and field cure two sets of four standard cylinder specimens for each composite sample.

8. Sampling of Pumped Concrete: Sample and cast separate specimens with concrete obtained both at the truck discharge and at the end of the pump delivery line. The test results obtained from the truck discharge shall govern.
9. Compressive-Strength Tests: ASTM C39.

    a. Test one set of three laboratory-cured specimens at seven days and one set of two specimens at 28 days.
    b. Test one set of three field-cured specimens at seven days and one set of two specimens at 28 days.
    c. A compressive-strength test shall be the average compressive strength from a set of two specimens obtained from same composite sample and tested at age indicated.

10. When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, Contractor shall evaluate operations and provide corrective procedures for protecting and curing in-place concrete.
11. Strength of each concrete mixture will be satisfactory if every 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 if specified compressive strength is 5000 psi, or no compressive strength test value is less than 10 percent of specified compressive strength if specified compressive strength is greater than 5000 psi.
12. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Director's Representative but will not be used as sole basis for approval or rejection of concrete.
13. Additional Tests:

    a. 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 Director's Representative.
    b. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C42 or by other methods as directed by Director's Representative.

        1) Acceptance criteria for concrete strength shall be in accordance with ACI 301 section 1.6.6.3.

14. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
15. Correct deficiencies in the Work that test reports and inspections indicate do not comply with the Contract Documents.

C. Measure floor and slab flatness and levelness in accordance with ASTM E1155 within 48 hours of completion of floor finishing and promptly report test results to Director's Representative.

3.15 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 051200 - STRUCTURAL STEEL FRAMING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Structural steel.
2. Shear stud connectors.
3. Shrinkage-resistant grout.

B. Related Requirements:

1. Section 053100 "Steel Decking" for field installation of shear stud connectors through deck.
2. Section 055000 "Metal Fabrications" for steel lintels and shelf angles not attached to structural-steel frame miscellaneous steel fabrications and other steel items not defined as structural steel.
3. Section 099123 "Interior Painting" and Section 099600 "High-Performance Coatings" for painting requirements.
4. Section 133419 "Pre-Engineered Metal Building Systems" for structural steel.

1.3 DEFINITIONS

A. Structural Steel: Elements of the structural frame indicated on Drawings and as described in ANSI/AISC 303.

B. Seismic-Load-Resisting System: Elements of structural-steel frame designated as "SLRS" or along grid lines designated as "SLRS" on Drawings, including columns, beams, and braces and their connections.

C. Heavy Sections: Rolled and built-up sections as follows:

1. Shapes included in ASTM A6 with flanges thicker than 1-1/2 inches.
2. Welded built-up members with plates thicker than 2 inches.
3. Column base plates thicker than 2 inches.

D. Protected Zone: Structural members or portions of structural members indicated as "protected zone" on Drawings. Connections of structural and nonstructural elements to protected zones are limited.

E. Demand-Critical Welds: Those welds, the failure of which would result in significant degradation of the strength and stiffness of the seismic-load-resisting system and which are indicated as "demand critical" or "seismic critical" on Drawings.

1.4 COORDINATION

A. Coordinate selection of shop primers with topcoats to be applied over them. Comply with paint and coating manufacturers' written recommendations to ensure that shop primers and topcoats are compatible with one another.

B. Coordinate installation of anchorage items to be embedded in or attached to other construction without delaying the Work. Provide setting diagrams, sheet metal templates, instructions, and directions for installation.

1.5 PREINSTALLATION MEETINGS

A. Preinstallation Conference: A minimum of 14 days prior to the initial submission of shop drawings, a meeting will be held at the Site for the purpose of reviewing the Contract Documents and discussing the requirements and procedures for submittals and for the Work. The meeting will be conducted by the Director’s Representative. The Contractor and the fabricator’s project coordinator and certified welding inspector must attend the meeting. The Director’s Representative and a Representative of OGS D&C Structural Engineering will also attend.

1.6 SUBMITTALS

A. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Manufacturer’s installation instructions shall be provided along with product data.

C. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).

D. Product Data:

1. Structural-steel materials.
2. High-strength, bolt-nut-washer assemblies.
3. Shear stud connectors.
4. Anchor rods.
5. Threaded rods.
6. Forged-steel hardware.
7. Slide bearings.
8. Prefabricated building columns.
9. Shop primer.
10. Galvanized-steel primer.
11. Etching cleaner.
12. Galvanized repair paint.

13. Shrinkage-resistant grout.

E. Submit an Environmental Product Declaration (EPD) from the manufacturer for structural steel within this specification section, if available. A statement of the contractor's good faith effort to obtain the EPD shall be provided if not available.

1. Manufacturer-provided EPDs must be Product Specific Type III (Third-Party Reviewed), in adherence with ISO 14025 *Environmental labels and declarations*, ISO 14044 *Environmental management – Life cycle assessment*, and ISO 21930 *Core rules for environmental product declarations of construction products and services.*

F. Shop Drawings: Show fabrication of structural-steel components.

1. Include details of cuts, connections, splices, camber, holes, and other pertinent data.
2. Include erection drawings indicating sizes, weights, and locations of all structural members.
3. Include embedment and base plate Drawings.
4. Indicate welds by standard AWS symbols, distinguishing between shop and field welds, and show size, length, and type of each weld. Show backing bars that are to be removed and supplemental fillet welds where backing bars are to remain.
5. Indicate type, size, and length of bolts, distinguishing between shop and field bolts. Identify pretensioned and slip-critical, high-strength bolted connections.
6. Identify members and connections of the seismic-load-resisting system.
7. Indicate locations and dimensions of protected zones.
8. Identify demand-critical welds.
9. Identify members not to be shop primed.

G. Welding Procedure Specifications (WPSs) and Procedure Qualification Records (PQRs): Provide in accordance with AWS D1.1 for each welded joint whether prequalified or qualified by testing, including the following:

1. Power source (constant current or constant voltage).
2. Electrode manufacturer and trade name, for demand-critical welds.

H. Delegated-Design Submittal: For structural-steel connections indicated on Drawings to comply with design loads, include analysis data signed and sealed by the qualified professional engineer in New York State responsible for their preparation.

I. Qualification Data: For Installer fabricator, professional engineer, testing agency.

J. Welding certificates.

K. Paint Compatibility Certificates: From manufacturers of topcoats applied over shop primers, certifying that shop primers are compatible with topcoats.

L. Mill test reports for structural-steel materials, including chemical and physical properties.

M. Product Test Reports: For the following:

1. Bolts, nuts, and washers, including mechanical properties and chemical analysis.
2. Direct-tension indicators.

3. Tension-control, high-strength, bolt-nut-washer assemblies.
4. Shear stud connectors.

N. Survey of existing conditions.

O. Source quality-control reports.

1. Documentation to confirm compliance with General Conditions Article 25.4 Domestic Steel.

P. Field quality-control reports.

1.7 QUALITY ASSURANCE

A. Fabricator Qualifications: The fabricator of the structural steel shall be regularly engaged in the fabrication of structural steel for a minimum of 5 years and shall be subject to the approval of the Director.

1. AISC Quality Certified Fabricators (latest list issued) are approved.

B. Installer Qualifications: The structural steel erector shall be regularly engaged in the erection of structural steel for a minimum of 5 years, and shall be subject to the approval of the Director.

C. Shop-Painting Applicators: Qualified in accordance with AISC's Sophisticated Paint Endorsement P1 or to SSPC-QP 3.

D. Welding Qualifications: Qualify procedures and personnel in accordance with AWS D1.1.

1. Welders and welding operators performing work on bottom-flange, demand-critical welds shall pass the supplemental welder qualification testing, as required by AWS D1.8. FCAW-S and FCAW-G shall be considered separate processes for welding personnel qualification.

E. If the value of the contract exceeds $100,000 all structural steel, reinforcing steel and other major steel items to be incorporated in the Work of this Contract shall be produced and made in whole or substantial part in the United States, its territories or possessions.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Store materials to permit easy access for inspection and identification. Keep steel members off ground and spaced by using pallets, dunnage, or other supports and spacers. Protect steel members and packaged materials from corrosion and deterioration.

1. Do not store materials on structure in a manner that might cause distortion, damage, or overload to members or supporting structures. Repair or replace damaged materials or structures as directed.

B. Store fasteners in a protected place in sealed containers with manufacturer's labels intact.

1. Fasteners may be repackaged provided Director’s Representative's testing and inspecting agency observes repackaging and seals containers.
2. Clean and relubricate bolts and nuts that become dry or rusty before use.
3. Comply with manufacturers' written recommendations for cleaning and lubricating ASTM F3125, Grade F1852 bolt assemblies and for retesting bolt assemblies after lubrication.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Comply with applicable provisions of the following specifications and documents:

1. ANSI/AISC 303.
2. ANSI/AISC 341.
3. ANSI/AISC 360.
4. RCSC's "Specification for Structural Joints Using High-Strength Bolts."

B. Connection Design Information:

1. Design connections and final configuration of member reinforcement at connections in accordance with ANSI/AISC 303 by fabricator's qualified professional engineer.

    a. Use Allowable Stress Design; data are given at service-load level.

C. Moment Connections: Type FR, fully restrained.

D. Construction: Moment frame Braced frame.

2.2 STRUCTURAL-STEEL MATERIALS

A. W-Shapes: ASTM A992.

B. Channels, Angles**:** ASTM A36.

C. Plate and Bar: ASTM A36.

D. Corrosion-Resisting (Weathering) Structural-Steel Shapes, Plates, and Bars: ASTM A588, 50 ksi.

E. Cold-Formed Hollow Structural Sections: ASTM A500, Grade B structural tubing.

F. Corrosion-Resisting (Weathering), Cold-Formed Hollow Structural Sections: ASTM A847 structural tubing.

G. Steel Pipe: ASTM A53, Type E or Type S, Grade B.

1. Weight Class: As indicated on the drawings.
2. Finish: Black except where indicated to be galvanized.

H. Steel Castings: ASTM A216, Grade WCB, with supplementary requirement S11.

I. Steel Forgings: ASTM A668.

J. Welding Electrodes: Comply with AWS requirements.

2.3 BOLTS AND CONNECTORS

A. High-Strength A325 Bolts, Nuts, and Washers: ASTM F3125, Grade A325, Type 1, heavy-hex steel structural bolts; ASTM A563, Grade DH, heavy-hex carbon-steel nuts; and ASTM F436, Type 1, hardened carbon-steel washers; all with plain finish.

1. Direct-Tension Indicators: ASTM F959, Type 325-1, compressible-washer type with plain finish.

B. High-Strength A490 Bolts, Nuts, and Washers: ASTM F3125, Grade A490, Type 1, heavy-hex steel structural bolts or Grade F2280 tension-control, bolt-nut-washer assemblies with splined ends; ASTM A563, Grade DH, heavy-hex carbon-steel nuts; and ASTM F436, Type 1, hardened carbon-steel washers; all with plain finish.

1. Direct-Tension Indicators: ASTM F959, Type 490-1, compressible-washer type with plain finish.

C. Zinc-Coated High-Strength A325 Bolts, Nuts, and Washers: ASTM F3125, Grade A325, Type 1, heavy-hex steel structural bolts; ASTM A563, Grade DH, heavy-hex carbon-steel nuts; and ASTM F436, Type 1, hardened carbon-steel washers.

1. Finish: Hot-dip zinc coating.
2. Direct-Tension Indicators: ASTM F959, Type 325-1, compressible-washer type with finish.

D. Tension-Control, High-Strength Bolt-Nut-Washer Assemblies: ASTM F3125, Grade F1852, Type 1, heavy-hex head assemblies, consisting of steel structural bolts with splined ends; ASTM A563, Grade DH, heavy-hex carbon-steel nuts; and ASTM F436, Type 1, hardened carbon-steel washers.

1. Finish: Plain.

2.4 RODS

A. Headed Anchor Rods: ASTM F1554, Grade 36, straight.

1. Nuts: ASTM A563hex carbon steel.
2. Plate Washers: ASTM A36 carbon steel.
3. Washers: ASTM F436, Type 1, hardened carbon steel.
4. Finish: Plain.

2.5 FORGED-STEEL STRUCTURAL HARDWARE

A. Clevises and Turnbuckles: Made from cold-finished carbon-steel bars, ASTM A108, AISI C-1035.

B. Eye Bolts and Nuts: Made from cold-finished carbon-steel bars, ASTM A108, AISI C-1030.

C. Sleeve Nuts: Made from cold-finished carbon-steel bars, ASTM A108, AISI C-1018.

2.6 PRIMER

A. Steel Primer:

1. Comply with Section 099123 "Interior Painting."
2. SSPC-Paint 23, latex primer.
3. Fabricator's standard lead- and chromate-free, nonasphaltic, rust-inhibiting primer complying with MPI#79 and compatible with topcoat.

B. Galvanized-Steel Primer: MPI#80,.

1. Etching Cleaner: MPI#25, for galvanized steel.
2. Galvanizing Repair Paint: MPI#18, MPI#19, or SSPC-Paint 20.

2.7 SHRINKAGE-RESISTANT GROUT

A. Metallic, Shrinkage-Resistant Grout: ASTM C1107, factory-packaged, metallic aggregate grout, mixed with water to consistency suitable for application and a 30-minute working time.

B. Nonmetallic, Shrinkage-Resistant Grout: ASTM C1107, factory-packaged, nonmetallic aggregate grout, noncorrosive and nonstaining, mixed with water to consistency suitable for application and a 30-minute working time.

2.8 FABRICATION

A. Structural Steel: Fabricate and assemble in shop to greatest extent possible. Fabricate in accordance with ANSI/AISC 303 and to ANSI/AISC 360.

1. Camber structural-steel members where indicated.
2. Fabricate beams with rolling camber up.
3. Identify high-strength structural steel in accordance with ASTM A6 and maintain markings until structural-steel framing has been erected.
4. Mark and match-mark materials for field assembly.
5. Complete structural-steel assemblies, including welding of units, before starting shop-priming operations.

B. Thermal Cutting: Perform thermal cutting by machine to greatest extent possible.

1. Plane thermally cut edges to be welded to comply with requirements in AWS D1.1.

C. Bolt Holes: Cut, drill,or punch standard bolt holes perpendicular to metal surfaces.

D. Finishing: Accurately finish ends of columns and other members transmitting bearing loads.

E. Cleaning: Clean and prepare steel surfaces that are to remain unpainted in accordance with SSPC-SP 3.

F. Steel Wall-Opening Framing: Select true and straight members for fabricating steel wall-opening framing to be attached to structural-steel frame. Straighten as required to provide uniform, square, and true members in completed wall framing. Build up welded framing, weld exposed joints continuously, and grind smooth.

G. Welded-Steel Door Frames: Build up welded-steel door frames attached to structural-steel frame. Weld exposed joints continuously and grind smooth. Plug-weld fixed steel bar stops to frames. Secure removable stops to frames with countersunk machine screws, uniformly spaced not more than 10 inches o.c. unless otherwise indicated on Drawings.

H. Holes: Provide holes required for securing other work to structural steel and for other work to pass through steel members.

1. Cut, drill, or punch holes perpendicular to steel surfaces. Do not thermally cut bolt holes or enlarge holes by burning.
2. Baseplate Holes: Cut, drill, mechanically thermal cut, or punch holes perpendicular to steel surfaces.
3. Weld threaded nuts to framing and other specialty items indicated to receive other work.

2.9 SHOP CONNECTIONS

A. High-Strength Bolts: Shop install high-strength bolts in accordance with RCSC's "Specification for Structural Joints Using High-Strength Bolts" for type of bolt and type of joint specified.

1. Joint Type: Snug tightened.

B. Weld Connections: Comply with AWS D1.1 and AWS D1.8 for tolerances, appearances, welding procedure specifications, weld quality, and methods used in correcting welding work.

1. Assemble and weld built-up sections by methods that maintain true alignment of axes without exceeding tolerances in ANSI/AISC 303 for mill material.

2.10 GALVANIZING

A. Hot-Dip Galvanized Finish: Apply zinc coating by the hot-dip process to structural steel in accordance with ASTM A123.

1. Fill vent and drain holes that are exposed in the finished Work unless they function as weep holes, by plugging with zinc solder and filing off smooth.
2. Galvanize lintels shelf angles and welded door frames attached to structural-steel frame and located in exterior walls.

2.11 SHOP PRIMING

A. Shop prime steel surfaces, except the following:

1. Surfaces embedded in concrete or mortar. Extend priming of partially embedded members to a depth of 2 inches.
2. Surfaces to be field welded.
3. Surfaces of high-strength bolted, slip-critical connections.
4. Surfaces to receive sprayed fire-resistive materials (applied fireproofing).
5. Galvanized surfaces unless indicated to be painted.
6. Corrosion-resisting (weathering) steel surfaces.
7. Surfaces enclosed in interior construction.

B. Surface Preparation of Steel: Clean surfaces to be painted. Remove loose rust and mill scale and spatter, slag, or flux deposits. Prepare surfaces in accordance with the following specifications and standards:

1. SSPC-SP 2.
2. SSPC-SP 3.
3. SSPC-SP 7 (WAB)/NACE WAB-4.
4. SSPC-SP 14 (WAB)/NACE WAB-8.
5. SSPC-SP 11.
6. SSPC-SP 6 (WAB)/NACE WAB-3.
7. SSPC-SP 10 (WAB)/NACE WAB-2.
8. SSPC-SP 5 (WAB)/NACE WAB-1.
9. SSPC-SP 8.

C. Surface Preparation of Galvanized Steel: Prepare galvanized-steel surfaces for shop priming by thoroughly cleaning steel of grease, dirt, oil, flux, and other foreign matter, and treating with etching cleaner.

D. Priming: Immediately after surface preparation, apply primer in accordance with manufacturer's written instructions and at rate recommended by SSPC to provide a minimum dry film thickness of 1.5 mils. Use priming methods that result in full coverage of joints, corners, edges, and exposed surfaces.

1. Stripe paint corners, crevices, bolts, welds, and sharp edges.
2. Apply two coats of shop paint to surfaces that are inaccessible after assembly or erection. Change color of second coat to distinguish it from first.

2.12 SOURCE QUALITY CONTROL

A. Testing Agency: Director’s Representative will engage a qualified testing agency to perform shop tests and inspections.

1. Allow testing agency access to places where structural-steel work is being fabricated or produced to perform tests and inspections.
2. Bolted Connections: Inspect shop-bolted connections in accordance with RCSC's "Specification for Structural Joints Using High-Strength Bolts."

3. Welded Connections: Visually inspect shop-welded connections in accordance with AWS D1.1 and the following inspection procedures, at testing agency's option:

    a. Liquid Penetrant Inspection: ASTM E165.
    b. Magnetic Particle Inspection: ASTM E709; performed on root pass and on finished weld. Cracks or zones of incomplete fusion or penetration are not accepted.
    c. Ultrasonic Inspection: ASTM E164.
    d. Radiographic Inspection: ASTM E94.

4. In addition to visual inspection, test and inspect shop-welded shear stud connectors in accordance with requirements in AWS D1.1 for stud welding and as follows:

    a. Perform bend tests if visual inspections reveal either a less-than-continuous 360-degree flash or welding repairs to any shear stud connector.
    b. Conduct tests in accordance with requirements in AWS D1.1 on additional shear stud connectors if weld fracture occurs on shear stud connectors already tested.

5. Prepare test and inspection reports.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify, with certified steel erector present, elevations of concrete- and masonry-bearing surfaces and locations of anchor rods, bearing plates, and other embedments for compliance with requirements.

    1. Prepare a certified survey of existing conditions. Include bearing surfaces, anchor rods, bearing plates, and other embedments showing dimensions, locations, angles, and elevations.

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

3.2 PREPARATION

A. Provide temporary shores, guys, braces, and other supports during erection to keep structural steel secure, plumb, and in alignment against temporary construction loads and loads equal in intensity to design loads. Remove temporary supports when permanent structural steel, connections, and bracing are in place unless otherwise indicated on Drawings.

    1. Do not remove temporary shoring supporting composite deck construction and structural-steel framing until cast-in-place concrete has attained its design compressive strength.

3.3 ERECTION

A. Set structural steel accurately in locations and to elevations indicated and in accordance with ANSI/AISC 303 and ANSI/AISC 360.

B. Baseplates Bearing Plates and Leveling Plates: Clean concrete- and masonry-bearing surfaces of bond-reducing materials, and roughen surfaces prior to setting plates. Clean bottom surface of plates.

1. Set plates for structural members on wedges, shims, or setting nuts as required.
2. Weld plate washers to top of baseplate.
3. Snug-tighten anchor rods after supported members have been positioned and plumbed. Do not remove wedges or shims but, if protruding, cut off flush with edge of plate before packing with grout.
4. Promptly pack shrinkage-resistant grout solidly between bearing surfaces and plates, so no voids remain. Neatly finish exposed surfaces; protect grout and allow to cure. Comply with manufacturer's written installation instructions for grouting.

C. Maintain erection tolerances of structural steel within ANSI/AISC 303.

D. Align and adjust various members that form part of complete frame or structure before permanently fastening. Before assembly, clean bearing surfaces and other surfaces that are in permanent contact with members. Perform necessary adjustments to compensate for discrepancies in elevations and alignment.

1. Level and plumb individual members of structure. Slope roof framing members to slopes indicated on Drawings.
2. Make allowances for difference between temperature at time of erection and mean temperature when structure is completed and in service.

E. Splice members only where indicated.

F. Do not use thermal cutting during erection unless approved by the Director’s Representative. Finish thermally cut sections within smoothness limits in AWS D1.1.

G. Do not enlarge unfair holes in members by burning or using drift pins. Ream holes that must be enlarged to admit bolts.

3.4 FIELD CONNECTIONS

A. High-Strength Bolts: Install high-strength bolts in accordance with RCSC's "Specification for Structural Joints Using High-Strength Bolts" for bolt and joint type specified.

1. Joint Type: Snug tightened.

B. Weld Connections: Comply with AWS D1.1 and AWS D1.8 for tolerances, appearances, welding procedure specifications, weld quality, and methods used in correcting welding work.

1. Comply with ANSI/AISC 303 and ANSI/AISC 360 for bearing, alignment, adequacy of temporary connections, and removal of paint on surfaces adjacent to field welds.
2. Remove backing bars or runoff tabs where indicated, back gouge, and grind steel smooth.
3. Assemble and weld built-up sections by methods that maintain true alignment of axes without exceeding tolerances in ANSI/AISC 303 for mill material.

3.5 REPAIR

A. Galvanized Surfaces: Clean areas where galvanizing is damaged or missing, and repair galvanizing to comply with ASTM A780.

B. Touchup Painting:

1. Immediately after erection, clean exposed areas where primer is damaged or missing, and paint with the same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.

a. Clean and prepare surfaces by SSPC-SP 2 hand-tool cleaning or SSPC-SP 3 power-tool cleaning.

2. Cleaning and touchup painting are specified in Section 099123 "Interior Painting."

C. Touchup Priming: Cleaning and touchup priming are specified in Section 099600 "High-Performance Coatings."

3.6 FIELD QUALITY CONTROL

A. Special Inspections: Director’s Representative will engage a special inspector and a qualified testing agency to perform tests and inspections in accordance with the requirements of BDC 406 Summary of Special Inspections and BDC 406.1 Statement of Special Inspections and as directed by the Code Compliance Manager.

END OF SECTION 051200

SECTION 053100 - STEEL DECKING

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. Roof deck.
2. Composite floor deck.

B. Related Requirements:

1. Section 033000 "Cast-in-Place Concrete" for normal-weight and lightweight structural concrete fill over steel deck.
2. Section 051200 "Structural Steel Framing" for shop- and field-welded shear connectors.
3. Section 055000 "Metal Fabrications" for framing deck openings with miscellaneous steel shapes.
4. Section 099123 "Interior Painting" for repair painting of primed deck and finish painting of deck.

1.3 SUBMITTALS

A. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Manufacturer’s installation instructions shall be provided along with product data.

C. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).

D. Product Data: For the following:

1. Roof deck.
2. Composite floor deck.

E. Submit an Environmental Product Declaration (EPD) from the manufacturer for steel sheets within this specification section, if available. A statement of the contractor’s good faith effort to obtain the EPD shall be provided if not available.

1. Manufacturer-provided EPDs must be Product Specific Type III (Third-Party Reviewed), in adherence with ISO 14025 *Environmental labels and declarations*, ISO 14044 *Environmental management – Life cycle assessment*, and ISO 21930 *Core rules for environmental product declarations of construction products and services.*

F. Shop Drawings:

1. Include layout and types of deck panels, anchorage details, reinforcing channels, pans, cut deck openings, special jointing, accessories, and attachments to other construction.

G. Welding certificates.

H. Product Certificates: For each type of steel deck.

I. Product Test Reports: For tests performed by a qualified testing agency, indicating that each of the following complies with requirements:

1. Power-actuated mechanical fasteners.
2. Screw fasteners
3. Acoustical roof deck.

J. Research Reports: For steel deck, from ICC-ES.

K. Source quality-control reports.

1. Documentation to confirm compliance with General Conditions Article 25.4 Domestic Steel.

L. Field quality-control reports.

1.4 QUALITY ASSURANCE

A. Welding Qualifications: Qualify procedures and personnel according to AWS D1.3, "Structural Welding Code - Sheet Steel."

B. Electrical Raceway Units: Provide UL-labeled cellular floor-deck units complying with UL 209 and listed in UL's "Electrical Construction Equipment Directory" for use with standard header ducts and outlets for electrical distribution systems.

C. If the value of the contract exceeds $100,000 all structural steel, reinforcing steel and other major steel items to be incorporated in the Work of this Contract shall be produced and made in whole or substantial part in the United States, its territories or possessions.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Protect steel deck from corrosion, deformation, and other damage during delivery, storage, and handling.

B. Stack steel deck on platforms or pallets and slope to provide drainage. Protect with a waterproof covering and ventilate to avoid condensation.

1. Protect and ventilate acoustical cellular roof deck with factory-installed insulation to maintain insulation free of moisture.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. AISI Specifications: Comply with calculated structural characteristics of steel deck according to AISI's "North American Specification for the Design of Cold-Formed Steel Structural Members."

B. Fire-Resistance Ratings: Comply with ASTM E119; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

1. Indicate design designations from UL's "Fire Resistance Directory" or from the listings of another qualified testing agency.

2.2 ROOF DECK

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Canam Steel Corporation; Canam Group, Inc.
2. Epic Metals Corporation.
3. New Millennium Building Systems, LLC.
4. Nucor Corporation.
5. Approved equivalent.

B. Roof Deck: Fabricate panels, without top-flange stiffening grooves, to comply with "SDI Specifications and Commentary for Steel Roof Deck," in SDI Publication No. 31, and with the following:

1. Galvanized and Shop-Primed Steel Sheet: ASTM A653, Structural Steel (SS), Grade 40, G90 zinc coating; cleaned, pretreated, and primed with manufacturer's standard baked-on, rust-inhibitive primer.

a. Color: Manufacturer's standard.

2. Aluminum-Zinc-Alloy-Coated Steel Sheet: ASTM A792, Structural Steel (SS), Grade 33 minimum, AZ50 aluminum-zinc-alloy coating.

3. Deck Profile: As indicated.

4. Span Condition: Triple span or more.

5. Side Laps: Overlapped or interlocking seam at Contractor's option.

2.3 ACOUSTICAL ROOF DECK

A. Manufacturers: Subject to compliance with requirements, provide products by one of the

2.4 COMPOSITE FLOOR DECK

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Canam Steel Corporation; Canam Group, Inc.
2. Epic Metals Corporation.
3. New Millennium Building Systems, LLC.
4. Nucor Corporation.
5. Approved equivalent.

B. Composite Floor Deck: Fabricate panels, with integrally embossed or raised pattern ribs and interlocking side laps, to comply with "SDI Specifications and Commentary for Composite Steel Floor Deck," in SDI Publication No. 31, with the minimum section properties indicated, and with the following:

1. Prime-Painted Steel Sheet: ASTM A1008, Structural Steel (SS), Grade 40 minimum, with top surface phosphatized and unpainted and underside surface shop primed with manufacturers' standard gray or white baked-on, rust-inhibitive primer.
2. Galvanized-Steel Sheet: ASTM A653, Structural Steel (SS), Grade 33, G60 zinc coating.
3. Galvanized and Shop-Primed Steel Sheet: ASTM A653, Structural Steel (SS), Grade 33, G60 zinc coating; with unpainted top surface and cleaned and pretreated bottom surface primed with manufacturer's standard baked-on, rust-inhibitive primer.
4. Profile Depth: As indicated.
5. Span Condition: Triple span or more.

2.5 ACCESSORIES

A. Provide manufacturer's standard accessory materials for deck that comply with requirements indicated.

B. Mechanical Fasteners: Corrosion-resistant, low-velocity, power-actuated or pneumatically driven carbon-steel fasteners; or self-drilling, self-threading screws.

C. Side-Lap Fasteners: Corrosion-resistant, hexagonal washer head; self-drilling, carbon-steel screws, No. 10 minimum diameter.

D. Flexible Closure Strips: Vulcanized, closed-cell, synthetic rubber.

E. Miscellaneous Sheet Metal Deck Accessories: Steel sheet, minimum yield strength of 33,000 psi, not less than 0.0359-inch design uncoated thickness, of same material and finish as deck; of profile indicated or required for application.

F. Pour Stops and Girder Fillers: Steel sheet, minimum yield strength of 33,000 psi, minimum 16 ga., of same material and finish as deck, and of thickness and profile recommended by SDI Publication No. 31 for overhang and slab depth.

G. Column Closures, End Closures, Z-Closures, and Cover Plates: Steel sheet, of same material, finish, and thickness as deck unless otherwise indicated.

H. Piercing Hanger Tabs: Piercing steel sheet hanger attachment devices for use with floor deck.

I. Weld Washers: Uncoated steel sheet, shaped to fit deck rib, 0.0598 inch thick, with factory-punched hole of 3/8-inch minimum diameter.

J. Flat Sump Plates: Single-piece steel sheet, 0.0747 inch thick, of same material and finish as deck. For drains, cut holes in the field.

K. Recessed Sump Pans: Single-piece steel sheet, 0.0747 inch thick, of same material and finish as deck, with 3-inch- wide flanges and sloped recessed pans of 1-1/2-inch minimum depth. For drains, cut holes in the field.

L. Galvanizing Repair Paint: ASTM A780 SSPC-Paint 20 or MIL-P-21035B, with dry film containing a minimum of 94 percent zinc dust by weight.

M. Repair Paint: Manufacturer's standard rust-inhibitive primer of same color as primer.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine supporting frame and field conditions for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

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

3.2 INSTALLATION, GENERAL

A. Install deck panels and accessories according to applicable specifications and commentary in SDI Publication No. 31, manufacturer's written instructions, and requirements in this Section.

B. Install temporary shoring before placing deck panels if required to meet deflection limitations.

C. Locate deck bundles to prevent overloading of supporting members.

D. Place deck panels on supporting frame and adjust to final position with ends accurately aligned and bearing on supporting frame before being permanently fastened. Do not stretch or contract side-lap interlocks.

1. Align cellular deck panels over full length of cell runs and align cells at ends of abutting panels.

E. Place deck panels flat and square and fasten to supporting frame without warp or deflection.

F. Cut and neatly fit deck panels and accessories around openings and other work projecting through or adjacent to deck.

G. Provide additional reinforcement and closure pieces at openings as required for strength, continuity of deck, and support of other work.

H. Comply with AWS requirements and procedures for manual shielded metal arc welding (SMAW), appearance and quality of welds, and methods used for correcting welding work.

I. Mechanical fasteners may be used in lieu of welding to fasten deck. Locate mechanical fasteners and install according to deck manufacturer's written instructions.

3.3 INSTALLATION OF ROOF DECK

A. Fasten roof-deck panels to steel supporting members by arc spot (puddle) welds of the surface diameter indicated or arc seam welds with an equal perimeter that is not less than 1-1/2 inches long, and as follows:

1. Weld Diameter: 3/4 inch, nominal.
2. Weld Spacing: Weld edge and interior ribs of deck units with a minimum of two welds per deck unit at each support. Space welds 18 inches apart, maximum.
3. Weld Washers: Install weld washers at each weld location.

B. Side-Lap and Perimeter Edge Fastening: Fasten side laps and perimeter edges of panels between supports, at intervals not exceeding the lesser of one-half of the span or 18 inches, and as follows:

1. Mechanically fasten with self-drilling, No. 10 diameter or larger, carbon-steel screws.
2. Mechanically clinch or button punch.
3. Fasten with a minimum of 1-1/2-inch- long welds.

C. End Bearing: Install deck ends over supporting frame with a minimum end bearing of 1-1/2 inches, with end joints as follows:

1. End Joints: Lapped 2 inches minimum or butted at Contractor's option.

D. Miscellaneous Roof-Deck Accessories: Install ridge and valley plates, finish strips, end closures, and reinforcing channels according to deck manufacturer's written instructions. Weld or mechanically fasten to substrate to provide a complete deck installation.

1. Weld cover plates at changes in direction of roof-deck panels unless otherwise indicated.

E. Flexible Closure Strips: Install flexible closure strips over partitions, walls, and where indicated. Install with adhesive according to manufacturer's written instructions to ensure complete closure.

3.4 INSTALLATION OF FLOOR DECK

A. Fasten floor-deck panels to steel supporting members by arc spot (puddle) welds of the surface diameter indicated and as follows:

1. Weld Diameter: 3/4 inch, nominal.
2. Weld Spacing: Weld edge ribs of panels at each support. Space additional welds an average of 12 inches apart, but not more than 18 inches apart.
3. Weld Spacing: Space and locate welds as indicated.

4. Weld Washers: Install weld washers at each weld location.

B. Side-Lap and Perimeter Edge Fastening: Fasten side laps and perimeter edges of panels between supports, at intervals not exceeding the lesser of one-half of the span or 36 inches, and as follows:

1. Mechanically fasten with self-drilling, No. 10 diameter or larger, carbon-steel screws.
2. Mechanically clinch or button punch.
3. Fasten with a minimum of 1-1/2-inch- long welds.

C. End Bearing: Install deck ends over supporting frame with a minimum end bearing of 1-1/2 inches, with end joints as follows:

1. End Joints: Lapped or butted at Contractor's option.

D. Pour Stops and Girder Fillers: Weld steel sheet pour stops and girder fillers to supporting structure according to SDI recommendations unless otherwise indicated.

E. Floor-Deck Closures: Weld steel sheet column closures, cell closures, and Z-closures to deck, according to SDI recommendations, to provide tight-fitting closures at open ends of ribs and sides of deck.

3.5 REPAIR

A. Galvanizing Repairs: Prepare and repair damaged galvanized coatings on both surfaces of deck with galvanized repair paint according to ASTM A780 and manufacturer's written instructions.

B. Repair Painting:

1. Wire brush and clean rust spots, welds, and abraded areas on both surfaces of prime-painted deck immediately after installation, and apply repair paint.
2. Apply repair paint, of same color as adjacent shop-primed deck, to bottom surfaces of deck exposed to view.
3. Wire brushing, cleaning, and repair painting of bottom deck surfaces are included in Section 099123 "Interior Painting."
4. Wire brushing, cleaning, and repair painting of rust spots, welds, and abraded areas of both deck surfaces are included in Section 099123 "Interior Painting."

3.6 FIELD QUALITY CONTROL

A. Special Inspections: Director's Representative will engage a special inspector and a qualified testing agency to perform tests and inspections in accordance with the requirements of BDC 406 Summary of Special Inspections and BDC 406.1 Statement of Special Inspections and as directed by the Code Compliance Manager.

END OF SECTION 053100

SECTION 055000 - METAL FABRICATIONS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Steel framing and supports for mechanical and electrical equipment.
2. Steel framing and supports for applications where framing and supports are not specified in other Sections.
3. Prefabricated building columns.
4. Shelf angles.
5. Metal ladders.
6. Ladder safety cages.
7. Alternating tread devices.
8. Metal ships' ladders.
9. Metal floor plate and supports.
10. Structural-steel door frames.
11. Miscellaneous steel trim including steel angle corner guards steel edgings and loading-dock edge angles.
12. Pipe guards.
13. Abrasive metal thresholds.
14. Metal downspout boots.
15. Loose bearing and leveling plates for applications where they are not specified in other Sections.

B. Products furnished, but not installed, under this Section include the following:

1. Loose steel lintels.
2. Anchor bolts, steel pipe sleeves, slotted-channel inserts, and wedge-type inserts indicated to be cast into concrete or built into unit masonry.

3. Steel weld plates and angles for casting into concrete for applications where they are not specified in other Sections.

C. Related Requirements:

1. Section 051200 "Structural Steel Framing" for steel framing, supports, elevator machine beams, hoist beams, divider beams, door frames, and other steel items attached to the structural-steel framing.
2. Section 077200 "Roof Accessories" for manufactured metal roof walkways and metal roof stairs.
3. Section 329300 "Plants" for tree grates.

1.2 COORDINATION

A. Coordinate selection of shop primers with topcoats to be applied over them. Comply with paint and coating manufacturers' written instructions to ensure that shop primers and topcoats are compatible with one another.

B. Coordinate installation of metal fabrications that are anchored to or that receive other work. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

1.3 SUBMITTALS

A. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Manufacturer’s installation instructions shall be provided along with product data.

C. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).

D. Product Data: For the following:

1. Nonslip aggregates and nonslip-aggregate surface finishes.
2. Fasteners.
3. Shop primers.
4. Shrinkage-resisting grout.
5. Prefabricated building columns.
6. Slotted channel framing.
7. Manufactured metal ladders.
8. Ladder safety cages.
9. Alternating tread devices.
10. Metal ships' ladders.
11. Metal bollards.
12. Pipe Downspoutguards.
13. Abrasive metal nosings treads andt hresholds.
14. Cast-iron wheel guards.
15. Metal downspout boots.

E. Submit an Environmental Product Declaration (EPD) from the manufacturer for structural steel and slotted channel framing within this specification section, if available. A statement of the contractor’s good faith effort to obtain the EPD shall be provided if not available.

1. Manufacturer-provided EPDs must be Product Specific Type III (Third-Party Reviewed), in adherence with ISO 14025 *Environmental labels and declarations*, ISO 14044 *Environmental management – Life cycle assessment*, and ISO 21930 *Core rules for environmental product declarations of construction products and services.*

F. Shop Drawings: Show fabrication and installation details. Include plans, elevations, sections, and details of metal fabrications and their connections. Show anchorage and accessory items. Provide Shop Drawings for the following:

1. Steel framing and supports for ceiling-hung toilet compartments.
2. Steel framing and supports for operable partitions.
3. Steel framing and supports for overhead doors and grilles.
4. Steel framing and supports for countertops.
5. Steel tube reinforcement for low partitions.
6. Steel framing and supports for mechanical and electrical equipment.
7. Steel framing and supports for applications where framing and supports are not specified in other Sections.
8. Steel shapes for supporting elevator door sills.
9. Steel girders for supporting wood frame construction.
10. Steel pipe columns for supporting wood frame construction.
11. Prefabricated building columns.
12. Shelf angles.
13. Metal ladders.
14. Ladder safety cages.
15. Alternating tread devices.
16. Metal ships' ladders.
17. Metal floor plate.
18. Elevator pit sump covers.
19. Structural-steel door frames.
20. Miscellaneous steel trim including steel angle corner guards steel edgings andloading-dock edge angles.
21. Metal bollards.
22. Loose steel lintels.
23. Vehicular barrier cable systems.

G. Samples for Verification: For each type and finish of extruded nosing and tread.

H. Delegated-Design Submittal: For ladders, including analysis and design data signed and sealed by the qualified professional engineer in New York State responsible for their preparation.

I. Qualification Data: For professional engineer's experience with providing delegated-design engineering services of the kind indicated, including documentation that engineer is licensed and registered in New York State.

J. Mill Certificates: Signed by stainless steel manufacturers, certifying that products furnished comply with requirements.

K. Welding certificates.

L. Paint Compatibility Certificates: From manufacturers of topcoats applied over shop primers, certifying that shop primers are compatible with topcoats.

M. Research Reports: For post-installed anchors.

N. Source quality-control reports.

1. Documentation to confirm compliance with General Conditions Article 25.4 Domestic Steel.

1.4 QUALITY ASSURANCE

A. Welding Qualifications: Qualify procedures and personnel in accordance with the following:

1. AWS D1.1, "Structural Welding Code - Steel."
2. AWS D1.2, "Structural Welding Code - Aluminum."
3. AWS D1.6, "Structural Welding Code - Stainless Steel."
4. For metals other than the ones listed above provide relevant welding qualifications and 5 years minimum relevant experience.

B. If the value of the contract exceeds $100,000 all structural steel, reinforcing steel and other major steel items to be incorporated in the Work of this Contract shall be produced and made in whole or substantial part in the United States, its territories or possessions.

1.5 FIELD CONDITIONS

A. Field Measurements: Verify actual locations of walls, floor slabs, decks, and other construction contiguous with metal fabrications by field measurements before fabrication.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Delegated Design: Engage a qualified professional engineer, licensed and registered in New York State, to design ladders.

B. Structural Performance of Aluminum Ladders: Ladders shall withstand the effects of loads and stresses within limits and under conditions specified in ANSI A14.3 and applicable OSHA standards.

C. Structural Performance of Alternating Tread Devices: Alternating tread devices shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:

1. Uniform Load: 40 lbf/sq. ft..
2. Concentrated Load: 300 lbf applied on an area of 4 sq. in..
3. Uniform and concentrated loads need not be assumed to act concurrently.
4. Alternating Tread Device Framing: Capable of withstanding stresses resulting from railing loads in addition to loads specified above.
5. Comply with applicable railing loadings in Section 055213 "Pipe and Tube Railings."

D. Vehicular Barrier Cable Systems: Design vehicular barrier cable systems to resist a single 6000-lbf service load and 10,000-lbf ultimate load applied horizontally in any direction to the cable

system, with anchorages or attachments capable of transferring this load to the structure. Limit deflection to 18 inches Design shall assume loads are applied at a height of 18 inches above the floor or ramp surface on an area not to exceed 1 sq. ft..

E. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes acting on exterior metal fabrications by preventing buckling, opening of joints, overstressing of components, failure of connections, and other detrimental effects.

1. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.

2.2 METALS

A. Metal Surfaces, General: Provide materials with smooth, flat surfaces unless otherwise indicated. For metal fabrications exposed to view in the completed Work, provide materials without seam marks, roller marks, rolled trade names, or blemishes.
1. Stainless Steel, General: Provide Type 316L for all exterior applications and where indicated.

B. Structural Steel Plates, Shapes, and Bars: ASTM A36.

C. Wide Flange Structural Steel Shapes: ASTM A992 , Grade 50.

D. Stainless Steel Sheet, Strip, and Plate: ASTM A240 or ASTM A666, Type 304.

E. Stainless Steel Bars and Shapes: ASTM A276, Type 304.

F. Stainless Steel Tubing: ASTM A554, Type 304

G. Rolled-Steel Floor Plate: ASTM A786, rolled from plate complying with ASTM A36 or ASTM A283, Grade C or D.

H. Rolled-Stainless Steel Floor Plate: ASTM A793.

I. Abrasive-Surface Floor Plate: Steel plate with abrasive granules rolled into surface with abrasive material metallically bonded to steel.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. Harsco Industrial IKG, a Division of Harsco Corporation.
b. W.S. Molnar Company.
c. Approved equivalent.

2. Source Limitations: Obtain floor plate from single source from single manufacturer.

J. Structural Steel Tubing: ASTM A500, cold-formed steel tubing.

K. Structural Steel Pipe: ASTM A53, Standard Weight (Schedule 40) unless otherwise indicated.

L. Zinc-Coated Steel Wire Rope: ASTM A741.

1. Wire Rope Fittings: Hot-dip galvanized-steel connectors with capability to sustain, without failure, a load equal to minimum breaking strength of wire rope with which they are used.

M. Stainless Steel Wire Rope: Wire rope manufactured from stainless steel wire complying with ASTM A492, Type 316.

1. Wire Rope Fittings: Stainless steel connectors, Type 316, with capability to sustain, without failure, a load equal to minimum breaking strength of wire rope with which they are used.

N. Steel Prestressing Strand: ASTM A416, Grade 270, low-relaxation, seven-wire, with 0.9-lb/sq. ft. zinc coating.

1. Steel Prestressing Strand Fittings: Hot-dip galvanized-steel anchors and connectors with capability to sustain, without failure, a load equal to minimum breaking strength of steel prestressing strand with which they are used.

O. Slotted Channel Framing: Cold-formed metal box channels (struts) complying with MFMA-4.

1. Size of Channels: 1-5/8 by 1-5/8 inches.
2. Material: Galvanized steel, ASTM A653, structural steel, Grade 33, with G90 coating; 0.108-inch nominal thickness.
3. Material: Cold-rolled steel, ASTM A1008, structural steel, Grade 33**;** minimum thickness; coated with rust-inhibitive, baked-on, acrylic enamel hot-dip galvanized after fabrication.

P. Cast Iron: Either gray iron, ASTM A48, or malleable iron, ASTM A47, unless otherwise indicated.

Q. Aluminum Plate and Sheet: ASTM B209, Alloy 6061-T6.

R. Aluminum Extrusions: ASTM B221, Alloy 6063-T6.

S. Aluminum-Alloy Rolled Tread Plate: ASTM B632, Alloy 6061-T6.

T. Aluminum Castings: ASTM B26, Alloy 443.0-F.

U. Bronze Extrusions: ASTM B455, Alloy UNS No. C38500 (extruded architectural bronze).

V. Bronze Castings: ASTM B584, Alloy UNS No. C83600 (leaded red brass) or UNS No. C84400 (leaded semired brass).

W. Nickel Silver Extrusions: ASTM B151, Alloy UNS No. C74500.

X. Nickel Silver Castings: ASTM B584, Alloy UNS No. C97600 (20 percent leaded nickel bronze).

2.3 FASTENERS

A. General: Unless otherwise indicated, provide Type 304 stainless steel fasteners for exterior use and zinc-plated fasteners with coating complying with ASTM B633 or ASTM F1941, Class Fe/Zn 5, at exterior walls. Select fasteners for type, grade, and class required.

1. Provide stainless steel fasteners for fastening stainless steel.
2. Provide bronze fasteners for fastening bronze.
3. Provide security nylon lock nuts and/or thread-locker fluid on nuts accessible to inmates.

B. Steel Bolts and Nuts: Regular hexagon-head bolts, ASTM A307, Grade A; with hex nuts, ASTM A563; and, where indicated, flat washers.

C. High-Strength Bolts, Nuts, and Washers: ASTM F3125, Grade A325 or A440 as noted, Type 3, heavy-hex steel structural bolts; ASTM A563, Grade DH3, heavy-hex carbon-steel nuts; and where indicated, flat washers.

D. Stainless Steel Bolts and Nuts: Regular hexagon-head annealed stainless steel bolts, ASTM F593; with hex nuts, ASTM F594; and, where indicated, flat washers; Alloy Group 1.

E. Anchor Bolts: ASTM F1554, Grade 36 or as noted, of dimensions indicated; with nuts, ASTM A563; and, where indicated, flat washers.

1. Hot-dip galvanize or provide mechanically deposited, zinc coating where item being fastened is indicated to be galvanized.

F. Anchors, General: Capable of sustaining, without failure, a load equal to six times the load imposed when installed in unit masonry and four times the load imposed when installed in concrete, as determined by testing in accordance with ASTM E488, conducted by a qualified independent testing agency.

G. Cast-in-Place Anchors in Concrete: Either threaded, deformed, or headed type unless otherwise indicated; galvanized ferrous castings, either ASTM A47 malleable iron or ASTM A27 cast steel. Provide bolts, washers, and shims as needed, all hot-dip galvanized per ASTM F2329.

H. Post-Installed Anchors: Torque-controlled expansion anchors or chemical anchors.

1. Material for Interior Locations: Carbon-steel components zinc plated to comply with ASTM B633 or ASTM F1941, Class Fe/Zn 5, unless otherwise indicated.
2. Material for Interior Locations Where Stainless Steel Is Indicated: Alloy Group 1 stainless steel bolts, ASTM F593, and nuts, ASTM F594.
3. Material for Exterior Locations: Alloy Group 2 stainless-steel bolts, ASTM F593, and nuts, ASTM F594.

I. Slotted-Channel Inserts: Cold-formed, hot-dip galvanized-steel box channels (struts) complying with MFMA-4, depth indicated by length indicated with anchor straps or studs not less than 3 inches long at not more than 8 inches o.c. Provide with temporary filler and tee-head bolts, complete with washers and nuts, all zinc-plated to comply with ASTM B633, Class Fe/Zn 5, as needed for fastening to inserts.

2.4 MISCELLANEOUS MATERIALS

A. Shop Primers: Provide primers that comply with Section 099123 "Interior Painting.".

B. Universal Shop Primer: Fast-curing, lead- and chromate-free, universal modified-alkyd primer complying with MPI#79 and compatible with topcoat.

1. Use primer containing pigments that make it easily distinguishable from zinc-rich primer.

C. Water-Based Primer: Emulsion type, anticorrosive primer for mildly corrosive environments that is resistant to flash rusting when applied to cleaned steel, complying with MPI#107 and compatible with topcoat.

D. Epoxy Zinc-Rich Primer: Complying with MPI#20 and compatible with topcoat.

E. Shop Primer for Galvanized Steel: Primer formulated for exterior use over zinc-coated metal and compatible with finish paint systems indicated.

F. Galvanizing Repair Paint: High-zinc-dust-content paint complying with SSPC-Paint 20 and compatible with paints specified to be used over it.

G. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D1187.

H. Shrinkage-Resistant Grout: Factory-packaged, nonmetallic, nonstaining, noncorrosive, nongaseous grout complying with ASTM C1107. Provide grout specifically recommended by manufacturer for interior and exterior applications.

I. Concrete: Comply with requirements in Section 033000 "Cast-in-Place Concrete" for normal-weight, air-entrained concrete with a minimum 28-day compressive strength of 3000 psi.

2.5 FABRICATION, GENERAL

A. Shop Assembly: Preassemble items in the shop to greatest extent possible. Disassemble units only as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation.

B. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.

C. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.

D. Form exposed work with accurate angles and surfaces and straight edges.

E. Weld corners and seams continuously to comply with the following:

1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
2. Obtain fusion without undercut or overlap.
3. Remove welding flux immediately.
4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.

F. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners or welds where possible. Where exposed fasteners are required, use Phillips flat-head (countersunk) fasteners unless otherwise indicated. Locate joints where least conspicuous.

G. Fabricate seams and other connections that are exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate.

H. Cut, reinforce, drill, and tap metal fabrications as indicated to receive finish hardware, screws, and similar items.

I. Provide for anchorage of type indicated; coordinate with supporting structure. Space anchoring devices to secure metal fabrications rigidly in place and to support indicated loads.

J. Where units are indicated to be cast into concrete or built into masonry, equip with integrally welded steel strap anchors, 1/8 by 1-1/2 inches, with a minimum 6-inch embedment and 2-inch hook, not less than 8 inches from ends and corners of units and 24 inches o.c., unless otherwise indicated.

2.6 MISCELLANEOUS FRAMING AND SUPPORTS

A. General: Provide steel framing and supports not specified in other Sections as needed to complete the Work.

B. Fabricate units from steel shapes, plates, and bars of welded construction unless otherwise indicated. Fabricate to sizes, shapes, and profiles indicated and as necessary to receive adjacent construction.

1. Fabricate units from slotted channel framing where indicated.
2. Furnish inserts for units installed after concrete is placed.

C. Fabricate steel pipe columns for supporting wood frame construction from steel pipe with steel baseplates and top plates as indicated. Drill or punch baseplates and top plates for anchor and connection bolts and weld to pipe with fillet welds all around. Make welds the same size as pipe wall thickness unless otherwise indicated.

1. Unless otherwise indicated, fabricate from Schedule 40 steel pipe.
2. Unless otherwise indicated, provide 1/2-inch baseplates with four 5/8-inch anchor bolts and 1/4-inch top plates.

D. Galvanize miscellaneous framing and supports where indicated.

E. Prime miscellaneous framing and supports with zinc-rich primer where indicated.

2.7 PREFABRICATED BUILDING COLUMNS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Black Rock Column, Inc.

2. Dean Lally L.P.
3. Approved equivalent.

B. Source Limitations: Obtain prefabricated building column from single source from single manufacturer.

C. General: Provide prefabricated building columns consisting of load-bearing structural-steel members protected by concrete fireproofing encased in an outer non-load-bearing steel shell. Fabricate connections to comply with details shown or as needed to suit type of structure indicated.

2.8 METAL LADDERS

A. General:

1. Comply with ANSI A14.3.
2. For elevator pit ladders, comply with ASME A17.1/CSA B44.

B. Steel Ladders:

1. Space siderails 18 inches apart unless otherwise indicated.
2. Siderails: Continuous, 3/8-by-2-1/2-inch steel flat bars, with eased edges.
3. Rungs: 3/4-inch- diameter, steel bars.
4. Fit rungs in centerline of siderails; plug-weld and grind smooth on outer rail faces.
5. Provide nonslip surfaces on top of each rung, either by coating rung with aluminum-oxide granules set in epoxy-resin adhesive or by using a type of manufactured rung filled with aluminum-oxide grout.

6. Provide nonslip surfaces on top of each rung by coating with abrasive material metallically bonded to rung.

    a. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

        1) Harsco Industrial IKG, a division of Harsco Corporation.
        2) W.S. Molnar Company.
        3) Approved equivalent.

7. Source Limitations: Obtain nonslip surfaces from single source from single manufacturer.
8. Provide platforms as indicated fabricated from welded or pressure-locked steel bar grating, supported by steel angles. Limit openings in gratings to no more than 1/2 inch in least dimension.
9. Support each ladder at top and bottom and not more than 60 inches o.c. with welded or bolted steel brackets.

C. Aluminum Ladders:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. Fixfast USA.
b. O'Keeffe's Inc.
c. Precision Ladders, LLC.
d. Approved equivalent.

2. Source Limitations: Obtain aluminum ladders from single source from single manufacturer.
3. Space siderails 18 inches apart unless otherwise indicated.
4. Siderails: Continuous extruded-aluminum channels or tubes, not less than 2-1/2 inches deep, 3/4 inch wide, and 1/8 inch thick.
5. Rungs: Extruded-aluminum tubes, not less than 3/4 inch deep and not less than 1/8 inch thick, with ribbed tread surfaces.
6. Fit rungs in centerline of siderails; fasten by welding or with stainless steel fasteners or brackets and aluminum rivets.
7. Provide platforms as indicated fabricated from, supported by extruded-aluminum framing. Limit openings in gratings to no more than 1/2 inch in least dimension.
8. Support each ladder at top and bottom and not more than 60 inches o.c. with welded or bolted aluminum brackets.
9. Provide minimum 72-inch- high, hinged security door with padlock hasp at foot of ladder to prevent unauthorized ladder use.

2.9 LADDER SAFETY CAGES

A. General:

1. Fabricate ladder safety cages to comply with ANSI A14.3. Assemble by welding or with stainless steel fasteners.
2. Provide primary hoops at tops and bottoms of cages and spaced not more than 20 feet o.c. Provide secondary intermediate hoops spaced not more than 48 inches o.c. between primary hoops.
3. Fasten assembled safety cage to ladder rails and adjacent construction by welding or with stainless steel fasteners unless otherwise indicated.

B. Steel Ladder Safety Cages:

1. Primary Hoops: 1/4-by-4-inch flat bar hoops.
2. Secondary Intermediate Hoops: 1/4-by-2-inch flat bar hoops.
3. Vertical Bars: 3/16-by-1-1/2-inch flat bars secured to each hoop.
4. Galvanize and prime ladder safety cages, including brackets and fasteners.
5. Prime ladder safety cages, including brackets and fasteners, with zinc-rich primer. primer specified in Section 099600 "High-Performance Coatings."

C. Aluminum Ladder Safety Cages:

1. Primary Hoops: 1/4-by-4-inch flat bar hoops.
2. Secondary Intermediate Hoops: 1/4-by-2-inch flat bar hoops.
3. Vertical Bars: 1/4-by-2-inch flat bars secured to each hoop.

2.10 STRUCTURAL-STEEL DOOR FRAMES

A. Fabricate structural-steel door frames from steel shapes, plates, and bars of size and to dimensions indicated, fully welded together, with 5/8-by-1-1/2-inch steel channel stops, unless otherwise indicated. Plug-weld built-up members and continuously weld exposed joints. Secure removable stops to frame with countersunk machine screws, uniformly spaced at not more than 10 inches o.c. Reinforce frames and drill and tap as necessary to accept finish hardware.

1. Provide with integrally welded steel strap anchors for securing door frames into adjoining concrete or masonry.

B. Extend bottom of frames to floor elevation indicated with steel angle clips welded to frames for anchoring frame to floor with expansion shields and bolts.

C. Galvanize and prime exterior steel frames.

D. Prime [exterior]steel frames with zinc-rich primer. primer specified in Section 099600 "High-Performance Coatings."

2.11 MISCELLANEOUS STEEL TRIM

A. Unless otherwise indicated, fabricate units from steel shapes, plates, and bars of profiles shown with continuously welded joints and smooth exposed edges. Miter corners and use concealed field splices where possible.

B. Provide cutouts, fittings, and anchorages as needed to coordinate assembly and installation with other work.

1. Provide with integrally welded steel strap anchors for embedding in concrete or masonry construction.

C. Galvanize and prime exterior miscellaneous steel trim.

D. Prime exterior miscellaneous steel trim with

E. Provide anchors for embedding units in concrete, either integral or applied to units, as standard with manufacturer.

F. Drill for mechanical anchors and countersink. Locate holes not more than 4 inches from ends and not more than 12 inches o.c., evenly spaced between ends, unless otherwise indicated. Provide closer spacing if recommended by manufacturer.

1. Provide two rows of holes for units more than 5 inches wide, with two holes aligned at ends and intermediate holes staggered.

G. Apply bituminous paint to concealed surfaces of cast-metal units.

H. Apply clear lacquer to concealed surfaces of extruded units.

2.12 STEEL WELD PLATES AND ANGLES

A. Provide steel weld plates and angles not specified in other Sections, for items supported from concrete construction as needed to complete the Work. Provide each unit with no fewer than two integrally welded steel anchors for embedding in concrete.

2.13 GENERAL FINISH REQUIREMENTS

A. Finish metal fabrications after assembly.

B. Finish exposed surfaces to remove tool and die marks and stretch lines, and to blend into surrounding surface.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing metal fabrications. Set metal fabrications accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.

B. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints but cannot be shop welded because of shipping size limitations. Do not weld, cut, or abrade surfaces of exterior units that have been hot-dip galvanized after fabrication and are for bolted or screwed field connections.

C. Field Welding: Comply with the following requirements:

1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
2. Obtain fusion without undercut or overlap.
3. Remove welding flux immediately.
4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.

D. Fastening to In-Place Construction: Provide anchorage devices and fasteners where metal fabrications are required to be fastened to in-place construction. Provide threaded fasteners for use with concrete and masonry inserts, toggle bolts, through bolts, lag screws, wood screws, and other connectors.

E. Provide temporary bracing or anchors in formwork for items that are to be built into concrete, masonry, or similar construction.

F. Corrosion Protection: Coat concealed surfaces of aluminum that come into contact with grout, concrete, masonry, wood, or dissimilar metals with the following:

1. Cast Aluminum: Heavy coat of bituminous paint.

2. Extruded Aluminum: Two coats of clear lacquer.

3.2 INSTALLATION OF MISCELLANEOUS FRAMING AND SUPPORTS

A. General: Install framing and supports to comply with requirements of items being supported, including manufacturers' written instructions and requirements indicated on Shop Drawings.

B. Anchor supports for ceiling hung toilet partitions overhead doors and securely to, and rigidly brace from, building structure.

C. Support steel girders on solid grouted masonry, concrete, or steel pipe columns. Secure girders with anchor bolts embedded in grouted masonry or concrete or with bolts through top plates of pipe columns.

1. Where grout space under bearing plates is indicated for girders supported on concrete or masonry, install as specified in "Installing Bearing and Leveling Plates" Article.

D. Install pipe columns on concrete footings with grouted baseplates. Position and grout column baseplates as specified in "Installation of Bearing and Leveling Plates" Article.

1. Grout baseplates of columns supporting steel girders after girders are installed and leveled.

3.3 INSTALLATION OF PREFABRICATED BUILDING COLUMNS

A. Install prefabricated building columns to comply with ANSI/AISC 360, "Specifications for Structural Steel Buildings," and with requirements applicable to listing and labeling for fire-resistance rating indicated.

3.4 INSTALLATION OF BEARING AND LEVELING PLATES

A. Clean concrete and masonry bearing surfaces of bond-reducing materials, and roughen to improve bond to surfaces. Clean bottom surface of plates.

B. Set bearing and leveling plates on wedges, shims, or leveling nuts. After bearing members have been positioned and plumbed, tighten anchor bolts. Do not remove wedges or shims but, if protruding, cut off flush with edge of bearing plate before packing with shrinkage-resistant grout. Pack grout solidly between bearing surfaces and plates to ensure that no voids remain.

3.5 REPAIRS

A. Touchup Painting:

1. Immediately after erection, clean field welds, bolted connections, and abraded areas. Paint uncoated and abraded areas with same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.

a. Apply by brush or spray to provide a minimum 2.0-mil dry film thickness.

2. Cleaning and touchup painting of field welds, bolted connections, and abraded areas of shop paint are specified in Section 099123 "Interior Painting."

B. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A780.

END OF SECTION 055000

SECTION 061000 - ROUGH CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:
   1. Wood blocking, cants, and nailers.
   2. Wood furring and grounds.

1.3 DEFINITIONS

A. Boards or Strips: Lumber of less than 2 inches nominal size in least dimension.

B. Dimension Lumber: Lumber of 2 inches nominal size or greater but less than 5 inches nominal size in least dimension.

C. Exposed Framing: Framing not concealed by other construction.

D. OSB: Oriented strand board.

E. Timber: Lumber of 5 inches nominal size or greater in least dimension.

1.4 SUBMITTALS

A. General: Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Manufacturer’s installation instructions shall be provided along with product data.

C. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).

D. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.

   1. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used and net amount of preservative retained.

2. Include data for fire-retardant treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Include physical properties of treated materials based on testing by a qualified independent testing agency.
3. For fire-retardant treatments, include physical properties of treated lumber both before and after exposure to elevated temperatures, based on testing by a qualified independent testing agency according to ASTM D5664.
4. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.

E. Sustainable Design Submittals:

F. Fastener Patterns: Full-size templates for fasteners in exposed framing.

G. Material Certificates: For dimension lumber specified to comply with minimum allowable unit stresses. Indicate species and grade selected for each use and design values approved by the ALSC Board of Review.

H. Evaluation Reports: For the following, from ICC-ES:
1. Metal framing anchors.

1.5 QUALITY ASSURANCE

A. Testing Agency Qualifications: For testing agency providing classification marking for fire-retardant treated material, an inspection agency acceptable to authorities having jurisdiction that periodically performs inspections to verify that the material bearing the classification marking is representative of the material tested.

B. Mill and Producers Mark: Each piece of lumber and plywood shall be grade stamped indicating type, grade, mill, and grading agency certified by the Board of Review of the American Lumber Standards Committee. Mark shall appear on unfinished surface, or ends of pieces with finished surfaces.

1. Pressure Preservative Treated Material: Accredited agency quality mark on each piece of wood indicating treatment.
2. Fire-Retardant Treated Material: Accredited testing agency mark on each piece of wood indicating compliance with the fire hazard classification.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Stack wood products flat with spacers beneath and between each bundle to provide air circulation. Protect wood products from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, comply with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Grade lumber by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.

1. Factory mark each piece of lumber with grade stamp of grading agency.
2. For exposed lumber indicated to receive a stained or natural finish, mark grade stamp on end or back of each piece.
3. Dress lumber, S4S, unless otherwise indicated.

B. Maximum Moisture Content of Lumber: 15 percent for 2-inch nominal thickness or less; 19 percent for more than 2-inch nominal thickness unless otherwise indicated.

C. Engineered Wood Products: Acceptable to authorities having jurisdiction and for which current model code research or evaluation reports exist that show compliance with building code in effect for Project.

1. Allowable design stresses, as published by manufacturers, shall meet or exceed those indicated. Manufacturer's published values shall be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency.

2.2 MISCELLANEOUS LUMBER

A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:

1. Blocking.
2. Nailers.
3. Cants.
4. Furring.
5. Grounds.

2.3 FASTENERS

A. General: Fasteners shall be of size and type indicated and shall comply with requirements specified in this article for material and manufacture.

1. Where rough carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A153.

B. Nails, Brads, and Staples: ASTM F1667.

2.4 METAL FRAMING ANCHORS

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

1. Cleveland Steel Specialty Co.
2. Phoenix Metal Products, Inc.
3. Simpson Strong-Tie Co., Inc.
4. Approved equivalent.

B. Allowable design loads, as published by manufacturers, shall meet or exceed those of products of manufacturers listed. Manufacturer's published values shall be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency. Framing anchors shall be punched for fasteners adequate to withstand same loads as framing anchors.

C. Wall Bracing: T-shaped bracing made for letting into studs in saw kerf, 1-1/8 inches wide by 9/16 inch deep by 0.034 inch thick with hemmed edges.

D. Wall Bracing: Angle bracing made for letting into studs in saw kerf, 15/16 by 15/16 by 0.040 inch thick with hemmed edges.

2.5 MISCELLANEOUS MATERIALS

A. Sill-Sealer Gaskets: Glass-fiber-resilient insulation, fabricated in strip form, for use as a sill sealer; 1-inch nominal thickness, compressible to 1/32 inch; selected from manufacturer's standard widths to suit width of sill members indicated.

B. Sill-Sealer Gaskets: Closed-cell neoprene foam, 1/4 inch thick, selected from manufacturer's standard widths to suit width of sill members indicated.

C. Flexible Flashing: Composite, self-adhesive, flashing product consisting of a pliable, butyl rubber compound, bonded to a high-density polyethylene film, aluminum foil, or spunbonded polyolefin to produce an overall thickness of not less than 0.025 inch.

D. Adhesives for Gluing Furring and Sleepers to Concrete or Masonry: Formulation complying with ASTM D3498 that is approved for use indicated by adhesive manufacturer.

E. Water-Repellent Preservative: NWWDA-tested and -accepted formulation containing 3-iodo-2-propynyl butyl carbamate, combined with an insecticide containing chloropyrifos as its active ingredient.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Framing Standard: Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.

B. Framing with Engineered Wood Products: Install engineered wood products to comply with manufacturer's written instructions.

C. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry accurately to other construction. Locate , nailers, blocking, grounds, and similar supports to comply with requirements for attaching other construction.

D. Install plywood backing panels by fastening to studs; coordinate locations with utilities requiring backing panels.

E. Install shear wall panels to comply with manufacturer's written instructions.

F. Install metal framing anchors to comply with manufacturer's written instructions. Install fasteners through each fastener hole.

G. Install sill sealer gasket to form continuous seal between sill plates and foundation walls.

H. Do not splice structural members between supports unless otherwise indicated.

I. Provide blocking and framing as indicated and as required to support facing materials, fixtures, specialty items, and trim.

1. Provide metal clips for fastening gypsum board or lath at corners and intersections where framing or blocking does not provide a surface for fastening edges of panels. Space clips not more than 16 inches o.c.

J. Provide fire blocking in furred spaces, stud spaces, and other concealed cavities as indicated and as follows:

1. Fire block furred spaces of walls, at each floor level, at ceiling, and at not more than 96 inches o.c. with solid wood blocking or noncombustible materials accurately fitted to close furred spaces.
2. Fire block concealed spaces of wood-framed walls and partitions at each floor level, at ceiling line of top story, and at not more than 96 inches o.c. Where fire blocking is not inherent in framing system used, provide closely fitted solid wood blocks of same width as framing members and 2-inch nominal thickness.
3. Fire block concealed spaces between floor sleepers with same material as sleepers to limit concealed spaces to not more than 100 sq. ft. and to solidly fill space below partitions.
4. Fire block concealed spaces behind combustible cornices and exterior trim at not more than 20 feet o.c.

K. Sort and select lumber so that natural characteristics do not interfere with installation or with fastening other materials to lumber. Do not use materials with defects that interfere with function of member or pieces that are too small to use with minimum number of joints or optimum joint arrangement.

L. Comply with AWPA M4 for applying field treatment to cut surfaces of preservative-treated lumber.

1. Use inorganic boron for items that are continuously protected from liquid water.
2. Use copper naphthenate for items not continuously protected from liquid water.

M. Where wood-preservative-treated lumber is installed adjacent to metal decking, install continuous flexible flashing separator between wood and metal decking.

N. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:

1. Table 2304.9.1, "Fastening Schedule," in the Uniform Code
2. Table R602.3(1), "Fastener Schedule for Structural Members," and Table R602.3(2), "Alternate Attachments," in the Uniform Code's International Residential Code for One- and Two-Family Dwellings.
3. ICC-ES evaluation report for fastener.

O. Use steel common nails unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood. Drive nails snug but do not countersink nail heads unless otherwise indicated.

3.2 INSTALLATION OF WOOD BLOCKING AND NAILERS

A. Install where indicated and where required for[**screeding or**] attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.

B. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces unless otherwise indicated.

C. Provide permanent grounds of dressed, pressure-preservative-treated, key-beveled lumber not less than 1-1/2 inches wide and of thickness required to bring face of ground to exact thickness of finish material. Remove temporary grounds when no longer required.

3.3 INSTALLATION OF WOOD FURRING

A. Install level and plumb with closure strips at edges and openings. Shim with wood as required for tolerance of finish work.

3.4 PROTECTION

A. Protect wood that has been treated with inorganic boron (SBX) from weather. If, despite protection, inorganic boron-treated wood becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

B. Protect rough carpentry from the weather. If, despite protection, rough carpentry becomes wet enough that moisture content exceeds that specified, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

END OF SECTION 061000

SECTION 064116 - PLASTIC-LAMINATE-CLAD ARCHITECTURAL CABINETS

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. Plastic-laminate-clad architectural cabinets.
2. Cabinet hardware and accessories.
3. Wood furring, blocking, shims, and hanging strips for installing plastic-laminate-clad architectural cabinets that are not concealed within other construction.

B. Related Requirements:

1. Section 061000 Rough Carpentry for wood furring, blocking, shims, and hanging strips required for installing cabinets that are concealed within other construction before cabinet installation.

1.3 REFERENCES

A. Architectural Woodwork Standards (including errata to date) by the Architectural Woodwork Institute (AWI).

1.4 COORDINATION

A. Coordinate sizes and locations of framing, blocking, furring, reinforcements, and other related units of Work specified in other Sections to support loads imposed by installed and fully loaded cabinets.

B. Hardware Coordination: Distribute copies of approved hardware schedule specified in Section 087100 "Door Hardware" to manufacturer of architectural cabinets; coordinate Shop Drawings and fabrication with hardware requirements.

1.5 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.6 SUBMITTALS

A. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Manufacturer’s installation instructions shall be provided along with product data.

C. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).

D. Product Data: For each type of product.

1. Include data for fire-retardant treatment from chemical-treatment manufacturer and certification by treating plant that treated materials comply with requirements.

E. Sustainable Design Submittals:

F. Shop Drawings:

1. Include plans, elevations, sections, and attachment details.
2. Show large-scale details.
3. Show locations and sizes of furring, blocking, and hanging strips, including concealed blocking and reinforcement specified in other Sections.
4. Show locations and sizes of cutouts and holes for items installed in plastic-laminate architectural cabinets.

G. Samples: For each exposed product and for each color and texture specified, in manufacturer's or manufacturer's standard size.

H. Samples for Initial Selection: For each type of exposed finish.

I. Samples for Verification: For the following:

1. Plastic Laminates: 12 by 12 inches, for each type, color, pattern, and surface finish required.

a. Provide one sample applied to core material with specified edge material applied to one edge.

2. Thermoset Decorative Panels: 12 by 12 inches, for each color, pattern, and surface finish.

a. Provide edge banding on one edge.

3. Corner Pieces:

a. Cabinet-front frame joints between stiles and rails and at exposed end pieces, 18 inches high by 18 inches wide by 6 inches deep.
b. Miter joints for standing trim.

4. Exposed Cabinet Hardware and Accessories: One full-size unit for each type and finish.

J. Qualification Data: For manufacturer and Installer.

K. Product Certificates: For the following:

1. Composite wood products.
2. Thermoset decorative panels.
3. High-pressure decorative laminate.
4. Glass.
5. Adhesives.

L. Evaluation Reports: For fire-retardant-treated materials, from ICC-ES.

M. Field quality-control reports.

1.7 CLOSEOUT SUBMITTALS

A. Quality Standard Compliance Certificates: AWI Quality Certification Program certificates.

1.8 QUALITY ASSURANCE

A. Manufacturer's Qualifications: Employs skilled workers who custom fabricate products similar to those required for this Project and whose products have a record of successful in-service performance.

1. Manufacturer's Certification: Licensed participant in AWI's Quality Certification Program.

B. Installer Qualifications: Manufacturer of products.

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

1. Build mockups of typical architectural cabinets as shown on Drawings.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Do not deliver cabinets until painting and similar finish operations that might damage architectural cabinets have been completed in installation areas. Store cabinets in installation areas or in areas where environmental conditions comply with requirements specified in "Field Conditions" Article.

1.10 FIELD CONDITIONS

A. Environmental Limitations without Humidity Control: Do not deliver or install cabinets until building is enclosed, wet-work is complete, and HVAC system is operating and maintaining

temperature and relative humidity at levels planned for building occupants during the remainder of the construction period.

B. Environmental Limitations with Humidity Control: Do not deliver or install cabinets until building is enclosed, wet-work is complete, and HVAC system is operating and maintaining temperature between 60 and 90 deg F and relative humidity between 25 and 55 percent during the remainder of the construction period.

C. Field Measurements: Where cabinets are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication, and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

1. Locate concealed framing, blocking, and reinforcements that support cabinets by field measurements before being enclosed/concealed by construction, and indicate measurements on Shop Drawings.

D. Established Dimensions: Where cabinets are indicated to fit to other construction, establish dimensions for areas where cabinets are to fit. Provide allowance for trimming at site, and coordinate construction to ensure that actual dimensions correspond to established dimensions.

PART 2 - PRODUCTS

2.1 PLASTIC-LAMINATE-CLAD ARCHITECTURAL CABINETS

A. Quality Standard: Unless otherwise indicated, comply with the Architectural Woodwork Standards for grades of cabinets indicated for construction, finishes, installation, and other requirements.

B. Architectural Woodwork Standards Grade: Custom.

C. Type of Construction: Frameless.

D. Door and Drawer-Front Style: Flush overlay.

1. Reveal Dimension: 1/2 inch.

E. High-Pressure Decorative Laminate: NEMA LD 3, grades as indicated or if not indicated, as required by quality standard.

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. Formica Corporation.
b. Pionite; a Panolam Industries International, Inc. brand.
c. Wilsonart LLC.
d. Approved equivalent.

F. Laminate Cladding for Exposed Surfaces:

1. Horizontal Surfaces: Grade HGS.
2. Postformed Surfaces: Grade HGP.
3. Vertical Surfaces: Grade HGS.
4. Edges: PVC edge banding, 1/8-inch thick, matching laminate in color, pattern, and finish.
5. Pattern Direction: Vertically for doors and fixed panels, horizontally for drawer fronts

G. Materials for Semiexposed Surfaces:

1. Surfaces Other Than Drawer Bodies: High-pressure decorative laminate, NEMA LD 3, Grade VGS.

    a. Edges of Plastic-Laminate Shelves: PVC tape, 0.018-inch minimum thickness, matching laminate in color, pattern, and finish.
    b. For semiexposed backs of panels with exposed plastic-laminate surfaces, provide surface of high-pressure decorative laminate, NEMA LD 3, Grade VGS.

2. Drawer Sides and Backs: Solid-hardwood lumber.
3. Drawer Bottoms: Hardwood plywood.

H. Dust Panels: 1/4-inch plywood or tempered hardboard above compartments and drawers unless located directly under tops.

I. Drawer Construction: Fabricate with exposed fronts fastened to subfront with mounting screws from interior of body.

1. Join subfronts, backs, and sides with glued dovetail joints.

J. Colors, Patterns, and Finishes: Provide materials and products that result in colors and textures of exposed laminate surfaces complying with the following requirements:

1. As indicated by laminate manufacturer's designations.
2. Match Director’s Representative's sample.
3. As selected by Director’s Representative from laminate manufacturer's full range in the following categories:

    a. Solid colors, matte finish.
    b. Solid colors with core same color as surface, matte finish.
    c. Wood grains, matte finish.
    d. Patterns, matte finish.

2.2 WOOD MATERIALS

A. Wood Products: Provide materials that comply with requirements of referenced quality standard for each type of architectural cabinet and quality grade specified unless otherwise indicated.

1. Wood Moisture Content: 5 to 10 percent.

B. Composite Wood Products: Provide materials that comply with requirements of referenced quality standard for each type of architectural cabinet and quality grade specified unless otherwise indicated.

1. Medium-Density Fiberboard (MDF): ANSI A208.2, Grade 130.
2. Particleboard (Medium Density): ANSI A208.1, Grade M-2.
3. Softwood Plywood: DOC PS 1, medium-density overlay.
4. Thermoset Decorative Panels: Particleboard or MDF finished with thermally fused, melamine-impregnated decorative paper and complying with requirements of NEMA LD 3, Grade VGL, for Test Methods 3.3, 3.4, 3.6, 3.8, and 3.10.

2.3 FIRE-RETARDANT-TREATED MATERIALS

A. Fire-Retardant-Treated Materials, General: Where fire-retardant-treated materials are indicated, use materials that are acceptable to authorities having jurisdiction and with fire-test-response characteristics specified as determined by testing identical products per test method indicated by a qualified testing agency.

1. Use treated materials that comply with requirements of referenced quality standard. Do not use materials that are warped, discolored, or otherwise defective.
2. Use fire-retardant-treatment formulations that do not bleed through or otherwise adversely affect finishes. Do not use colorants to distinguish treated materials from untreated materials.
3. Identify fire-retardant-treated materials with appropriate classification marking of qualified testing agency in the form of removable paper label or imprint on surfaces that will be concealed from view after installation.

B. Fire-Retardant-Treated Lumber and Plywood: Products with a flame-spread index of 25 or less when tested according to ASTM E84, with no evidence of significant progressive combustion when the test is extended an additional 20 minutes, and with the flame front not extending more than 10.5 feet beyond the centerline of the burners at any time during the test.

1. Kiln-dry lumber and plywood after treatment to a maximum moisture content of 19 and 15 percent, respectively.
2. For items indicated to receive a stained or natural finish, use organic resin chemical formulation.
3. Mill lumber after treatment within limits set for wood removal that do not affect listed fire-test-response characteristics, using a woodworking shop certified by testing and inspecting agency.
4. Mill lumber before treatment and implement procedures during treatment and drying processes that prevent lumber from warping and developing discolorations from drying sticks or other causes, marring, and other defects affecting appearance of architectural cabinets.

C. Fire-Retardant Particleboard: Made from softwood particles and fire-retardant chemicals mixed together at time of panel manufacture to achieve flame-spread index of 25 or less and smoke-developed index of 25 or less per ASTM E84.

1. For panels 3/4 inch thick and less, comply with ANSI A208.1 for Grade M-2 except for the following minimum properties: modulus of rupture, 1600 psi; modulus of elasticity, 300,000 psi; internal bond, 80 psi; and screw-holding capacity on face and edge, 250 and 225 lbf, respectively.
2. For panels 13/16 to 1-1/4 inches thick, comply with ANSI A208.1 for Grade M-1 except for the following minimum properties: modulus of rupture, 1300 psi; modulus of elasticity, 250,000 psi; linear expansion, 0.50 percent; and screw-holding capacity on face and edge, 250 and 175 lbf, respectively.

D. Fire-Retardant Fiberboard: MDF panels complying with ANSI A208.2, made from softwood fibers, synthetic resins, and fire-retardant chemicals mixed together at time of panel manufacture to achieve flame-spread index of 25 or less and smoke-developed index of 200 or less per ASTM E84.

2.4 CABINET HARDWARE AND ACCESSORIES

A. General: Provide cabinet hardware and accessory materials associated with architectural cabinets except for items specified in Section 087100 "Door Hardware."

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. Accuride International.
    b. Blum, Julius & Co., Inc.
    c. Knape & Vogt Manufacturing Company.
    d. Approved equivalent.

B. Butt Hinges: 2-3/4-inch, five-knuckle steel hinges made from 0.095-inch- thick metal, and as follows:

1. Semiconcealed Hinges for Flush Doors: ANSI/BHMA A156.9, B01361.
2. Semiconcealed Hinges for Overlay Doors: ANSI/BHMA A156.9, B01521.

C. Frameless Concealed Hinges (European Type): ANSI/BHMA A156.9, B01602, **135** degrees of opening**,** self-closing.

D. Back-Mounted Pulls: ANSI/BHMA A156.9, B02011.

E. Wire Pulls: Back mounted, solid metal, 4 inches long, 5/16 inch in diameter.

F. Catches: Magnetic catches, ANSI/BHMA A156.9, B03141

G. Adjustable Shelf Standards and Supports: ANSI/BHMA A156.9, B04071; with shelf rests, B04081.

H. Shelf Rests: ANSI/BHMA A156.9, B04013; two-pin plastic with shelf hold-down clip.

I. Drawer Slides: ANSI/BHMA A156.9.

1. Grade 1 and Grade 2: Side mounted and extending under bottom edge of drawer.

    a. Type: Full extension.
    b. Material: Epoxy-coated steel with polymer rollers.

2. Grade 1HD-100 and Grade 1HD-200: Side mounted; full-extension type; zinc-plated-steel ball-bearing slides.
3. For drawers not more than 3 inches high and not more than 24 inches wide, provide Grade 1.
4. For drawers more than 3 inches high, but not more than 6 inches high and not more than 24 inches wide, provide Grade 1HD-100.
5. For drawers more than 6 inches high or more than 24 inches wide, provide Grade 1HD-200.
6. For computer keyboard shelves, provide Grade 1.
7. For trash bins not more than 20 inches high and 16 inches wide, provide Grade 1HD-100.

J. Door Locks: ANSI/BHMA A156.11, E07121.

K. Drawer Locks: ANSI/BHMA A156.11, E07041.

L. Door and Drawer Silencers: ANSI/BHMA A156.16, L03011.

M. Exposed Hardware Finishes: For exposed hardware, provide finish that complies with ANSI/BHMA A156.18 for ANSI/BHMA finish number indicated.

1. Dark, Oxidized, Satin Bronze, Oil Rubbed: ANSI/BHMA 613 for bronze base; ANSI/BHMA 640 for steel base; match Director’s Representative's sample.
2. Bright Brass, Clear Coated: ANSI/BHMA 605 for brass base; ANSI/BHMA 632 for steel base.
3. Bright Brass, Vacuum Coated: ANSI/BHMA 723 for brass base; ANSI/BHMA 729 for zinc-coated-steel base.
4. Satin Brass, Blackened, Bright Relieved, Clear Coated: ANSI/BHMA 610 for brass base; ANSI/BHMA 636 for steel base.
5. Satin Chromium Plated: ANSI/BHMA 626 for brass or bronze base; ANSI/BHMA 652 for steel base.
6. Bright Chromium Plated: ANSI/BHMA 625 for brass or bronze base; ANSI/BHMA 651 for steel base.
7. Satin Stainless Steel: ANSI/BHMA 630.

N. For concealed hardware, provide manufacturer's standard finish that complies with product class requirements in ANSI/BHMA A156.9.

2.5 MISCELLANEOUS MATERIALS

A. Furring, Blocking, Shims, and Hanging Strips: Softwood or hardwood lumber, kiln-dried to less than 15 percent moisture content.

B. Anchors: Select material, type, size, and finish required for each substrate for secure anchorage. Provide metal expansion sleeves or expansion bolts for post-installed anchors. Use nonferrous-metal or hot-dip galvanized anchors and inserts at inside face of exterior walls and at floors.

2.6 FABRICATION

A. Fabricate architectural cabinets to dimensions, profiles, and details indicated.

B. Complete fabrication, including assembly and hardware application, to maximum extent possible before shipment to Project site. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.

1. Notify Director’s Representative seven days in advance of the dates and times architectural cabinet fabrication will be complete.
2. Trial fit assemblies at manufacturer's shop that cannot be shipped completely assembled. Install dowels, screws, bolted connectors, and other fastening devices that can be removed after trial fitting. Verify that various parts fit as intended and check measurements of assemblies against field measurements before disassembling for shipment.

C. Shop-cut openings to maximum extent possible to receive hardware, appliances, electrical work, and similar items. Locate openings accurately and use templates or roughing-in diagrams to produce accurately sized and shaped openings. Sand edges of cutouts to remove splinters and burrs.

D. Install glass to comply with applicable requirements in Section 088000 "Glazing" and in GANA's "Glazing Manual."

1. For glass in frames, secure glass with removable stops.
2. For exposed glass edges, polish and grind smooth.

PART 3 - EXECUTION

3.1 PREPARATION

A. Before installation, condition cabinets to humidity conditions in installation areas for not less than 72 hours.

3.2 INSTALLATION

A. Architectural Woodwork Standards Grade: Install cabinets to comply with quality standard grade of item to be installed.

B. Assemble cabinets and complete fabrication at Project site to extent that it was not completed in the shop.

C. Anchor cabinets to anchors or blocking built in or directly attached to substrates. Secure with wafer-head cabinet installation screws.

D. Install cabinets level, plumb, and true in line to a tolerance of 1/8 inch in 96 inches using concealed shims.

1. Scribe and cut cabinets to fit adjoining work, refinish cut surfaces, and repair damaged finish at cuts.
2. Install cabinets without distortion so doors and drawers fit openings and are accurately aligned. Adjust hardware to center doors and drawers in openings and to provide unencumbered operation. Complete installation of hardware and accessory items as indicated.
3. Fasten wall cabinets through back, near top and bottom, and at ends not more than 16 inches o.c. with No. 10 wafer-head screws sized for not less than 1-1/2-inch penetration into wood framing, blocking, or hanging strips.

3.3 ADJUSTING AND CLEANING

A. Repair damaged and defective cabinets, where possible, to eliminate functional and visual defects. Where not possible to repair, replace architectural cabinets. Adjust joinery for uniform appearance.

B. Clean, lubricate, and adjust hardware.

C. Clean cabinets on exposed and semi exposed surfaces.

END OF SECTION 064116

SECTION 071113 - BITUMINOUS DAMPPROOFING

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. Cold-applied, emulsified-asphalt dampproofing.

1.3 SUBMITTALS

A. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Manufacturer’s installation instructions shall be provided along with product data.

C. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).

D. Product Data: For each type of product.

1.4 FIELD CONDITIONS

A. Weather Limitations: Proceed with application only when existing and forecasted weather conditions permit dampproofing to be performed according to manufacturers' written instructions.

B. Ventilation: Provide adequate ventilation during application of dampproofing in enclosed spaces. Maintain ventilation until dampproofing has cured.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Source Limitations: Obtain primary dampproofing materials and primers from single source from single manufacturer. Provide **protection course and** auxiliary materials recommended in writing by manufacturer of primary materials.

2.2 PERFORMANCE REQUIREMENTS

A. VOC Content: Products shall comply with VOC content limits of authorities having jurisdiction unless otherwise indicated.

2.3 COLD-APPLIED, EMULSIFIED-ASPHALT DAMPPROOFING

A. Manufacturers: Subject to compliance with requirements, provide products by the following:

1. BASF Corporation.
2. Henry Company.
3. Karnak Corporation.
4. W.R. Meadows, Inc.
5. Approved equivalent.

B. Trowel Coats: ASTM D1227, Type II, Class 1.

C. Fibered Brush and Spray Coats: ASTM D1227, Type II, Class 1.

D. Brush and Spray Coats: ASTM D1227, Type III, Class 1.

2.4 AUXILIARY MATERIALS

A. Furnish auxiliary materials recommended in writing by dampproofing manufacturer for intended use and compatible with bituminous dampproofing.

B. Emulsified-Asphalt Primer: ASTM D1227, Type III, Class 1, except diluted with water as recommended in writing by manufacturer.

C. Asphalt-Coated Glass Fabric: ASTM D1668, Type I.

D. Patching Compound: Epoxy or latex-modified repair mortar of type recommended in writing by dampproofing manufacturer.

E. Protection Course: ASTM D6506, semirigid sheets of fiberglass or mineral-reinforced-asphaltic core, pressure laminated between two asphalt-saturated fibrous liners.

1. Thickness: Nominal 1/8 inch.
2. Adhesive: Rubber-based solvent type recommended in writing by waterproofing manufacturer for protection course type.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Applicator present, for compliance with requirements for surface smoothness, maximum surface moisture content, and other conditions affecting performance of the Work.

B. Proceed with application only after substrate construction and penetrating work have been completed and unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Clean, prepare, and treat substrates according to manufacturer's written instructions. Provide clean, dust-free, and dry substrates for dampproofing application.

B. Mask or otherwise protect adjoining exposed surfaces from being stained, spotted, or coated with dampproofing. Prevent dampproofing materials from entering and clogging weep holes and drains.

C. Clean substrates of projections and substances detrimental to dampproofing work; fill voids, seal joints, and remove bond breakers if any.

D. Apply patching compound to patch and fill tie holes, honeycombs, reveals, and other imperfections**;** cover with asphalt-coated glass fabric.

3.3 APPLICATION, GENERAL

A. Comply with manufacturer's written instructions for dampproofing application, cure time between coats, and drying time before backfilling unless otherwise indicated.

1. Apply dampproofing to provide continuous plane of protection.
2. Apply additional coats if recommended in writing by manufacturer or to achieve a smooth surface and uninterrupted coverage.

B. Where dampproofing footings and foundation walls, apply from finished-grade line to top of footing; extend over top of footing and down a minimum of 6 inches over outside face of footing.

1. Extend dampproofing 12 inches onto intersecting walls and footings, but do not extend onto surfaces exposed to view when Project is completed.
2. Install flashings and corner protection stripping at internal and external corners, changes in plane, construction joints, cracks, and where indicated as "reinforced," by embedding an 8-inch-wide strip of asphalt-coated glass fabric in a heavy coat of dampproofing. Dampproofing coat for embedding fabric is in addition to other coats required.

C. Where dampproofing exterior face of inner wythe of exterior masonry cavity walls, lap dampproofing at least 1/4 inch onto flashing, masonry reinforcement, veneer ties, and other items that penetrate inner wythe.

1. Extend dampproofing over outer face of structural members and concrete slabs that interrupt inner wythe.
2. Lap dampproofing at least 1/4 inch onto shelf angles supporting veneer.

D. Where dampproofing interior face of above-grade, exterior [concrete] [and] [masonry] [single-wythe masonry] walls, continue dampproofing through intersecting walls by keeping vertical mortar joints at intersection temporarily open or by dampproofing wall before constructing intersecting walls.

3.4 COLD-APPLIED, EMULSIFIED-ASPHALT DAMPPROOFING

A. Concrete Foundations: Apply two brush or spray coats at not less than 1.5 gal./100 sq. ft. for first coat and 1 gal./100 sq. ft. for second coat.

3.5 PROTECTION COURSE INSTALLATION

A. Install protection course over completed-and-cured dampproofing. Comply with dampproofing-material and protection-course manufacturers' written instructions for attaching protection course.

1. Support protection course over cured coating with spot application of adhesive type recommended in writing by protection-board manufacturer.
2. Install protection course as soon as permissible by dampproofing manufacturer.

3.6 PROTECTION

A. Protect installed insulation drainage panels from damage due to UV light, harmful weather exposures, physical abuse, and other causes. Provide temporary coverings where panels are subject to abuse and cannot be concealed and protected by permanent construction immediately after installation.

B. Correct dampproofing that does not comply with requirements; repair substrates and reapply dampproofing.

END OF SECTION 071113

SECTION 072600 - VAPOR RETARDERS

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. Vapor retarders.

1.3 REFERENCE STANDARDS

A. ASTM D 882 Standard Test Method for Tensile Properties of Thin Plastic Sheeting.

B. ASTM D 1709 Standard Test Methods of Impact Resistance of Plastic Film by the Free-Falling Dart Method.

C. ASTM E 96 Standard Test Methods for Water Vapor Transmission of Materials.

D. ASTM E 154 Standard Test Methods for Water Vapor Retarders Used in Contact with Earth Under Concrete Slabs.

E. ASTM E 1643 Standard Practice for Installation of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs.

F. ASTM E 1745 Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil Or Granular Fill Under Concrete Slabs.

1.4 SUBMITTALS

A. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Manufacturer’s installation instructions shall be provided along with product data.

C. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).

D. Product Data: For each type of product.

E. Samples:

1. Vapor Retarder Material: 12 inches square.
2. Pressure-Sensitive Tape: 36 inches long piece minimum.

F. Product Test Reports: For each product, for tests performed by a qualified testing agency.

PART 2 - PRODUCTS

2.1 POLYETHYLENE VAPOR RETARDERS

A. Vapor Retarders: ASTM D4397, 10-mil-thick sheet, with maximum permeance rating of 0.1 perm.

1. Products: Subject to compliance with requirements, provide one of the following:

a. Henry Company; Moistop Ultra 10.
b. Raven Industries, Inc.; VaporBlock 10 (VB10).
c. Stego Industries, LLC.; Stego Wrap 10-Mil Class A Vapor Retarder.
d. W. R. Meadows, Inc.; Perminator 10 Mil Underslab Vapor Barrier.
e. Approved equivalent.

B. Vapor Retarders: ASTM D4397, 15-mil-thick sheet, with maximum permeance rating of 0.1 perm.

1. Products: Subject to compliance with requirements, provide one of the following:

a. Henry Company; Moistop Ultra 15.
b. Raven Industries, Inc.; VaporBlock 15 (VB15).
c. Stego Industries, LLC.; Stego Wrap 15-Mil Class A Vapor Retarder.
d. W. R. Meadows, Inc.; Perminator 15 Mil Underslab Vapor Barrier.
e. Approved equivalent.

2.2 ACCESSORIES

A. Vapor-Retarder Tape: Pressure-sensitive tape of type recommended by vapor-retarder manufacturer for sealing joints and penetrations in vapor retarder.

B. Adhesive for Vapor Retarders: Product recommended by vapor-retarder manufacturer and has demonstrated capability to bond vapor retarders securely to substrates indicated.

C. Vapor-Retarder Fasteners: Pancake-head, self-tapping steel drill screws; with fender washers

D. Pipe Boots: Vapor retarder manufacturer’s standard pipe boots, or construct pipe boots from vapor retarder material, pressure-sensitive tape and/or adhesive, in accordance with vapor retarder manufacturer’s instructions

PART 3 - EXECUTION

3.1 PREPARATION

A. Rake, trim, and tamp surfaces over which vapor retarder is to be installed to true planes.

B. Clean substrates of substances that are harmful to vapor retarders, including removing projections capable of puncturing vapor retarders.

3.2 INSTALLATION OF VAPOR RETARDERS

A. Install vapor retarder in accordance with manufacturer’s printed instructions and ASTM E 1643.

B. Install vapor retarders over prepared grade. Lap joints a minimum of 12 inches and seal with manufacturer's recommended tape. Install second layer over pathways to equipment.

C. Extend vapor retarder over footings and seal to foundation wall or grade beam with manufacturer's recommended tape.

1. Extend vapor retarder vertically minimum 24 inches above top of footing.

D. Seal around penetrations such as utilities and columns in order to create a monolithic, airtight membrane at grade surface, perimeter, and all vertical penetrations.

3.3 PROTECTION

A. Protect vapor retarders from damage until concealed by permanent construction.

B. Repair tears and punctures with a piece of vapor retarder material, overlapping the tear or puncture a minimum of six inches on all sides, and completely seal edges with pressure-sensitive tape or adhesive.

END OF SECTION 072600

SECTION 077253 - SNOW GUARDS

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. Pad-Type Polycarbonate snow guards.

1.3 SUBMITTALS

A. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Manufacturers' installation instructions shall be provided along with product data.

C. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).

D. Product Data: For each type of product, include construction details, material descriptions, dimensions of individual components and profiles, and finishes.

E. Shop Drawings: Include roof plans showing layouts and attachment details of snow guards.

1. Include details of rail-type snow guards.

F. Samples:

1. Pad-Type Snow Guards: Full-size unit with installation hardware.

G. Delegated-Design Submittal: For snow guards, include analysis reports signed and sealed by the qualified professional engineer responsible for their preparation.

1. Include calculation of number and location of snow guards.

H. Quality Control Submittals:

1. Qualification Data: For professional engineer experience with providing delegated design engineering services of the kind indicated, including documentation that the Director's Representative is licensed in the jurisdiction in which the Project is located.

2. Product Test Reports: For each type of snow guard, for tests performed by a qualified testing agency, indicating load at failure of attachment to roof system identical to roof system used on this Project.

1.4 FIELD CONDITIONS

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit adhesive-mounted snow guards to be installed, and adhesive cured, according to adhesive manufacturer's written instructions.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Performance Requirements: Provide snow guards that withstand exposure to weather and resist thermally induced movement without failure, rattling, or fastener disengagement due to defective manufacture, fabrication, installation, or other defects in construction.

1. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.

B. Structural Performance: Snow guards shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated.

1. Snow Loads: As indicated on Drawings.

2.2 PAD-TYPE POLYCARBONATE SNOW GUARDS

A. Polycarbonate Flat-Mounted Snow Guards:

1. Products: Subject to compliance with requirements, provide the following:

a. Zaleski Snow-Guard and Roofing Specialties Inc.; Model #15
b. Approved equivalent.

2. Material:

a. Polycarbonate

3. Attachment: Manufacturer's tested system, capable of resisting design loads.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with Installer present, for compliance with requirements for installation tolerances, snow guard attachment, and other conditions affecting performance of the Work.

1. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.

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

3.2 PREPARATION

A. Clean and prepare substrates for bonding snow guards.

B. Prime substrates according to snow guard manufacturer's written instructions.

3.3 INSTALLATION

A. Install snow guards according to manufacturer's written instructions.

1. Space rows as recommended by manufacturer.

B. Attachment for Exposed Fastened Metal Roofing:

1. Do not use fasteners that will void metal roofing finish warranty.
2. Pad-Type, Flat-Mounted Snow Guards:

a. Adhere to metal roofing according to manufacturer's instructions.

END OF SECTION 077253

SECTION 079200 - JOINT SEALANTS

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. Silicone joint sealants.
2. Nonstaining silicone joint sealants.
3. Urethane joint sealants.
4. Mildew-resistant joint sealants.
5. Polysulfide joint sealants.
6. Butyl joint sealants.
7. Latex joint sealants.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.4 SUBMITTALS

A. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Manufacturer’s installation instructions shall be provided along with product data.

C. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).

D. Product Data: For each joint-sealant product.

1. Including manufacturer’s installation instructions.

2.

E. Quality Control Submittals:

1. Installer’s Qualifications Data: Affidavit required under Quality Assurance Article

2. Company Field Advisor Data: Name, Business Address and Telephone Number of Company Field Advisor

F. Samples:

1. Joint Fillers: 24 inches long full section.
2. Gaskets: 24 inches long full section.
3. Joint Primer/Sealer/Conditioners: 1 pint.
4. Backer Rods: 24 inches long full section.
5. Bond Breaker Tape: 24 inches long full section.
6. Sealants: 1 pint or standard tube

G. Samples for Initial Selection: Manufacturer's color charts consisting of strips of cured sealants showing the full range of colors available for each product exposed to view.

H. Samples for Verification: For each kind and color of joint sealant required, provide Samples with joint sealants in 1/2-inch-wide joints formed between two 6-inch- long strips of material matching the appearance of exposed surfaces adjacent to joint sealants.

I. Joint-Sealant Schedule: Include the following information:

1. Joint-sealant application, joint location, and designation.
2. Joint-sealant manufacturer and product name.
3. Joint-sealant formulation.
4. Joint-sealant color.

J. Qualification Data: For qualified testing agency.

K. Product Test Reports: For each kind of joint sealant, for tests performed by manufacturer and witnessed by a qualified testing agency.

L. Preconstruction Laboratory Test Schedule: Include the following information for each joint sealant and substrate material to be tested:

1. Joint-sealant location and designation.
2. Manufacturer and product name.
3. Type of substrate material.
4. Proposed test.
5. Number of samples required.

M. Preconstruction Laboratory Test Reports: From sealant manufacturer, indicating the following:

1. Materials forming joint substrates and joint-sealant backings have been tested for compatibility and adhesion with joint sealants.
2. Interpretation of test results and written recommendations for primers and substrate preparation are needed for adhesion.

N. Preconstruction Field-Adhesion-Test Reports: Indicate which sealants and joint preparation methods resulted in optimum adhesion to joint substrates based on testing specified in "Preconstruction Testing" Article.

O. Field-Adhesion-Test Reports: For each sealant application tested.

P. Sample Warranties: For special warranties.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: An authorized representative who is trained and approved by manufacturer.

1. The persons installing the sealants and their supervisor shall be personally experienced in the installation of sealants and shall have been regularly employed by a company engaged in the installation of sealants for a minimum of two years.

    a. Furnish to the Director the names and addresses of five similar projects which the foregoing people have worked on during the past two years.
    b. Furnish a letter from the sealant manufacturer, stating that the foregoing people are authorized to install the manufacturer's sealant materials and that the manufacturer's specifications are applicable to the requirements of this Project.

B. Product Testing: Test joint sealants using a qualified testing agency.

1. Testing Agency Qualifications: Qualified according to ASTM C1021 to conduct the testing indicated.
2. Test and validate sealants used for exterior weather sealing per the Sealant Waterproofing Restoration Institute (SWRI).

C. Container Labels: Include manufacturer's name, trade name of product, kind of material, federal specification number (if applicable), expiration date (if applicable), and packaging date or batch number.

D. Mockups: Install sealant in mockups of assemblies specified in other Sections that are indicated to receive joint sealants specified in this Section. Use materials and installation methods specified in this Section.

1.6 PRECONSTRUCTION TESTING

A. Preconstruction Laboratory Testing: Submit to joint-sealant manufacturers, for testing indicated below, samples of materials that will contact or affect joint sealants.

1. Adhesion Testing: Use ASTM C794 to determine whether priming and other specific joint preparation techniques are required to obtain rapid, optimum adhesion of joint sealants to joint substrates.
2. Compatibility Testing: Use ASTM C1087 to determine sealant compatibility when in contact with glazing and gasket materials.

3. Stain Testing: Use ASTM C1248 to determine stain potential of sealant when in contact with Insulated Metal Panel substrates.

4. Submit manufacturer's recommended number of pieces of each type of material, including joint substrates, joint-sealant backings, and miscellaneous materials.
5. Schedule sufficient time for testing and analyzing results to prevent delaying the Work.
6. For materials failing tests, obtain joint-sealant manufacturer's written instructions for corrective measures, including use of specially formulated primers.
7. Testing will not be required if joint-sealant manufacturers submit data that are based on previous testing, not older than 24 months, of sealant products for adhesion to, staining of, and compatibility with joint substrates and other materials matching those submitted.

B. Preconstruction Field-Adhesion Testing: Before installing sealants, field test their adhesion to Project joint substrates as follows:

1. Locate test joints where indicated on Project or, if not indicated, as directed by Director's Representative.
2. Conduct field tests for each kind of sealant and joint substrate.
3. Notify Director's Representative seven days in advance of dates and times when test joints will be erected.
4. Arrange for tests to take place with joint-sealant manufacturer's technical representative present.

    a. Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1.1 in ASTM C1193 or Method A, Tail Procedure, in ASTM C1521.

        1) For joints with dissimilar substrates, verify adhesion to each substrate separately; extend cut along one side, verifying adhesion to opposite side. Repeat procedure for opposite side.

5. Report whether sealant failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each kind of product and joint substrate. For sealants that fail adhesively, retest until satisfactory adhesion is obtained.
6. Evaluation of Preconstruction Field-Adhesion-Test Results: Sealants not evidencing adhesive failure from testing, in absence of other indications of noncompliance with requirements, will be considered satisfactory. Do not use sealants that fail to adhere to joint substrates during testing.

1.7 FIELD CONDITIONS

A. Do not proceed with installation of joint sealants under the following conditions:

1. Humidity and Moisture: Do not install the Work of this Section under conditions that are detrimental to the application, curing and performance of the material.
2. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F.
3. When joint substrates are wet.
4. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
5. Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

6. Ventilation: Provide sufficient ventilation wherever sealants, primers, and other similar materials are installed in enclosed spaces. Follow manufacturer's recommendations.

1.8 WARRANTY

A. Special Installer's Warranty: Installer agrees to repair or replace joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.

1. Warranty Period: **[Two]** years from date of Substantial Completion.

B. Special Manufacturer's Warranty: Manufacturer agrees to furnish joint sealants to repair or replace those joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.

1. Warranty Period: **[Five]** years from date of Substantial Completion.

C. Special warranties specified in this article exclude deterioration or failure of joint sealants from the following:

1. Movement of the structure caused by stresses on the sealant exceeding sealant manufacturer's written specifications for sealant elongation and compression.
2. Disintegration of joint substrates from causes exceeding design specifications.
3. Mechanical damage caused by individuals, tools, or other outside agents.
4. Changes in sealant appearance caused by accumulation of dirt or other atmospheric contaminants.

D. Product Warranties

1. Silicone Sealant: 20 years weatherseal warranty.
2. Polyurethane: 5 year weatherseal warranty.
3. Sealants for granite, marble and limestone: 20 year non-stain warranty.

PART 2 - PRODUCTS

2.1 JOINT SEALANTS, GENERAL

A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.

B. Colors of Exposed Joint Sealants: As selected by Director’s Representative from manufacturer's full range.

C. Colors of Concealed Joint Sealants: provide the natural color which has the best overall performance characteristics.

2.2 SILICONE JOINT SEALANTS

A. Silicone, S, NS, 100/50, NT: Single-component, nonsag, plus 100 percent and minus 50 percent movement capability, nontraffic-use, neutral-curing silicone joint sealant; ASTM C920, Type S, Grade NS, Class 100/50, Use NT.

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. Dowsil; 790 Silicone Building Sealant
b. Or equal.

B. Silicone, S, NS, 50, NT: Single-component, nonsag, plus 50 percent and minus 50 percent movement capability, nontraffic-use, neutral-curing silicone joint sealant; ASTM C920, Type S, Grade NS, Class 50, Use NT.

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. Dowsil; 756 SMS Building Sealant (cold weather application)
b. Dowsil; 791
c. Dowsil; 795
d. Dowsil; Contractors Concrete Sealant (CCS)
e. GE Construction Sealants; SCS2000 SilPruf Sealant
f. Or equal.

C. Silicone, S, NS, 35, NT: Single-component, nonsag, plus 35 percent and minus 35 percent movement capability. nontraffic-use, neutral-curing silicone joint sealant; ASTM C920, Type S, Grade NS, Class 35, Use NT.

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. Dowsil; Contractors Weatherproofing Sealant (CWS)
b. GE Construction Sealants; SWS Sealant
c. Or equal.

D. Silicone, S, NS, 100/50, T, NT: Single-component, nonsag, plus 100 percent and minus 50 percent movement capability, traffic- and nontraffic-use, neutral-curing silicone joint sealant; ASTM C920, Type S, Grade NS, Class 100/50, Uses T and NT.

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. Pecora Corporation; 300SL
b. Dowsil; NS Parking Structure Sealant.
c. Or equal.

E. Silicone, M, SL, 100/50, T, NT: Multicomponent, self-levelling, plus 100 percent and minus 50 percent movement capability, traffic- and nontraffic-use, neutral-curing silicone joint sealant; ASTM C920, Type M, Class 100/50, Uses T and NT.

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. Dowsil; Parking Structure Sealant FC or SL
b. Or equal.

F. Silicone: Single-component sealant for high temperatures.

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. Dowsil; 736 Heat Resistant Sealant
b. Dowsil; Hi-Temp Sealant Red
c. Henkel Adhesives; Loctite SI 596
d. Tremco Incorporated; TremPro 644 HT
e. Or equal.

2.3 NONSTAINING SILICONE JOINT SEALANTS

A. Nonstaining Joint Sealants: No staining of substrates when tested according to ASTM C1248.

B. Silicone, Nonstaining, S, NS, 100/50, NT: Nonstaining, single-component, nonsag, plus 100 percent and minus 50 percent movement capability, nontraffic-use, neutral-curing silicone joint sealant; ASTM C920, Type S, Grade NS, Class 100/50, Use NT.

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. Pecora Corporation; 890FTS.
b. Pecora Corporation; 890NST.
c. Or equal.

C. Silicone, Nonstaining, S, NS, 50, NT: Nonstaining, single-component, nonsag, plus 50 percent and minus 50 percent movement capability, nontraffic-use, neutral-curing silicone joint sealant; ASTM C920, Type S, Grade NS, Class 50, Use NT.

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. Pecora Corporation; 864NST.
b. Pecora Corporation; 895NST.
c. Or equal.

2.4 URETHANE JOINT SEALANTS

A. Urethane, S, NS, 50, NT: Single-component, nonsag, nontraffic-use, plus 50 percent and minus 50 percent movement capability, urethane joint sealant; ASTM C920, Type S, Grade NS, Class 50, Use NT.

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. Tremco Incorporated; Dymonic 100
b. Or equal.

B. Urethane, S, NS, 35, NT: Single-component, nonsag, plus 35 percent and minus 35 percent movement capability, non-traffic-use, urethane joint sealant; ASTM C920, Type S, Grade NS, Class 5, Use NT.

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. Bostik; Chem-Calk 915
b. Master Builders Solutions; MasterSeal NP1
c. Or equal.

C. Urethane, S, NS, 35, T: Single-component, nonsag, plus 35 percent and minus 35 percent movement capability, traffic-use, urethane joint sealant; ASTM C920, Type S, Grade NS, Class 5, Use T.

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. Sika Corporation; Sikaflex-1a
b. Or equal.

D. Urethane, S, NS, 25, NT: Single-component, nonsag, nontraffic-use, plus 25 percent and minus 25 percent movement capability, urethane joint sealant; ASTM C920, Type S, Grade NS, Class 25, Use NT.

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. Bostik; Chem-Calk 916 Textured.
b. Or equal.

E. Urethane, S, NS, 25, T, NT: Single-component, nonsag, plus 25 percent and minus 25 percent movement capability, traffic- and nontraffic-use, urethane joint sealant; ASTM C920, Type S, Grade NS, Class 25, Uses T and NT.

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. Sika Corporation; Sikaflex Textured Sealant
    b. Tremco Incorporated; Vulkem 116
    c. Or equal.

F. Urethane, S, P, 35, T: Single-component, pourable, plus 35 percent and minus 35 percent movement capability, traffic, urethane joint sealant; ASTM C920, Type S, Grade P, Class 35, Uses T.

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. Tremco Incorporated; Vulkem 45SSL
    b. Or equal.

G. Urethane, S, P, 25, T: Single-component, pourable, plus 25 percent and minus 25 percent movement capability, traffic-use, urethane joint sealant; ASTM C920, Type S, Grade P, Class 25, Uses T.

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. Sika Corporation; Sikaflex-1c SL
    b. Or equal.

H. Urethane, M, NS, 50, T: Multicomponent, nonsag, plus 50 percent and minus 50 percent movement capability, traffic -use, urethane joint sealant; ASTM C920, Type M, Grade NS, Class 50, Uses T.

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. Pecora Corporation; Dynatrol II
    b. Or equal.

I. Urethane, M, NS, 25, T, NT: Multicomponent, nonsag, plus 25 percent and minus 25 percent movement capability, traffic- and nontraffic-use, urethane joint sealant; ASTM C920, Type M, Grade NS, Class 25, Uses T and NT.

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. Sika Corporation; Joint Sealants; Sikaflex 2c NS EZ Mix.
    b. Or equal.

J. Urethane, M, P, 35, T, NT: Multicomponent, pourable, plus 35 percent and minus 35 percent movement capability, traffic- and nontraffic-use, urethane joint sealant; ASTM C920, Type M, Grade P, Class 35, Uses T and NT.

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. Tremco Incorporated; Vulkem 445SSL.
b. Or equal.

K. Urethane, M, P, 25, T, NT: Multicomponent, pourable, plus 25 percent and minus 25 percent movement capability, traffic- and nontraffic-use, urethane joint sealant; ASTM C920, Type M, Grade P, Class 25, Uses T and NT.

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. Pecora Corporation; Urexpan NR 200.
b. Tremco Incorporated; THC 900/901.
c. Sika Corporation; Sikaflex-2c SL
d. Or equal.

2.5 MILDEW-RESISTANT JOINT SEALANTS

A. Mildew-Resistant Joint Sealants: Formulated for prolonged exposure to humidity with fungicide to prevent mold and mildew growth.

B. Silicone, Mildew Resistant, Acid Curing, S, NS, 25, NT: Mildew-resistant, single-component, nonsag, plus 25 percent and minus 25 percent movement capability, nontraffic-use, acid-curing silicone joint sealant; ASTM C920, Type S, Grade NS, Class 25, Use NT.

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. Dowsil; 786
b. Dowsil; Tub/Tile/Ceramic Sealant
c. GE Construction Sealants ; SCS1700 Sanitary
d. Bostik; Tub & Tile Caulk
e. Or equal.

C. Silicone, Mildew Resistant, Neutral Curing, S, NS, 50, NT: Mildew-resistant, single-component, nonsag, plus 50 percent and minus 50 percent movement capability, nontraffic-use, neutral-curing silicone joint sealant; ASTM C920, Type S, Grade NS, Class 50, Use NT.

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. Pecora Corporation; 898NST Sanitary Silicone
b. Or equal.

2.6 POLYSULFIDE JOINT SEALANTS

A. Polysulfide, M, NS, 25, T, NT: Multicomponent, nonsag, plus 25 percent and minus 25 percent movement capability, nontraffic-use, polysulfide joint sealant; ASTM C920, Type M, Grade NS, Class 25, Use NT.

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. Pecora Corporation; Synthacalk GC2+
b. Sika Duoflex NS
c. Or equal.

2.7 BUTYL JOINT SEALANTS

A. Butyl-Rubber-Based Joint Sealants: ASTM C1311.

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. Pecora Corporation; BC-158.
b. PTI; 707.
c. Tremco; Butyl Sealant.
d. Or equal.

2.8 LATEX JOINT SEALANTS

A. Acrylic Latex: Acrylic latex or siliconized acrylic latex, ASTM C834, Type OP, Grade NF.

1. Products: Subject to compliance with requirements, provide the following:

a. Bostik; Duo-Sil.
b. GE Construction Sealants; All Weather Pro Sealant.
c. Pecora Corporation; AVW-920; AC-20.
d. Or equal.

2.9 MISCELLANEOUS SEALANTS

A. Flame and smoke resistant intumescent sealant:

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. Metacaulk MC 150+ Firestop Sealant,
b. 3M Fire Barrier Caulk CP 25WB+,
c. Dowsil; Smoke Seal 800SL
d. Or equal.

B. Security Sealants:

1. Two part, non-sag, 25% total joint movement, elastomeric polyurethane;

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

1) Pecora Corporation; Dynaflex.
2) Or equal.

2. One-component 25% total joint movement, elastomeric, aliphatic, polyurethane;

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

1) Pecora Corporation; Dynaflex SC,
2) Master Builders Solutions; MasterSeal CR 195
3) Or equal.

C. Hydrophobic hybrid polyurethane; Roadware Flexible Cement II, 2100 Wentworth Avenue, South Saint Paul, Minnesota 55075, (612) 457-6122.

D. Pre-formed Sealant: Preformed paintable sealant strips of open cell, compressible urethane foam, saturated with non-drying, non-staining, and non-migrating butylene compound.

2.10 JOINT FILLERS

A. Self-Expanding Cork Joint Filler: Resilient, non-extruding type pre-molded cork units; ASTM D 1752, Type III.

B. Cork Joint Filler: Resilient, non-extruding type pre-molded cork units; ASTM D 1752, Type II.

C. Closed Cell Neoprene Joint Filler: ASTM D 1056, Class SC (oil resistant and medium swell), 2 to 5 psi compression deflection.

D. Expanded Polyethylene Joint Filler: Flexible, compressible, closed-cell polyethylene of not less than 10 psi compression deflection (25 percent).

E. Closed Cell Polyurethane Joint Filler: Resilient, compressible, semi-rigid; W.R. Meadows Ceramar or A.C. Horn Closed Cell Plastic Foam Filler, Code 5401.

2.11 GASKETS

A. Hollow Neoprene Gasket: Hollow or compartmentalized neoprene extrusion, designed to withstand compression to 40 percent of normal width without extrusion from joint, and with full recovery; heavy, durable top member, suitable for long-term exposure to weather and traffic, hardness of 55 Shore A; ASTM D 2628.

B. Adhesive Closed-Cell PVC Gasket: Closed-cell, flexible, self-adhesive, non-extruding, polyvinylchloride foam gaskets; ASTM D 1667.

2.12 JOINT-SEALANT BACKING

A. Cylindrical Sealant Backings: ASTM C1330, Type C closed-cell material with a surface skin, and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.

B. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint. Provide self-adhesive tape where applicable.

2.13 MISCELLANEOUS MATERIALS

A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

1. For Security Sealant (two part):

    a. Pecora Corporation; No. P-100 for non-porous substrates.
    b. Pecora Corporation; No. P-75 or P-200 for porous substrates.
    c. Or equal.

2. For Security Sealant (one component):

    a. Pecora Corporation; No. P-100 for non-porous substrates.
    b. Pecora Corporation; No. P-75 for porous substrates.
    c. Master Builder’s Solutions; MasterSeal P173 and P 176 for porous or non- porous substrates.
    d. Or equal.

B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way and formulated to promote optimum adhesion of sealants to joint substrates.

C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting performance of the Work.

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

3.2 PREPARATION

A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:

1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
2. Clean porous joint substrate surfaces by brushing, grinding, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Porous joint substrates include the following:

    a. Concrete.
    b. Unglazed surfaces of ceramic tile.
    c. Exterior insulation and finish systems.

3. Remove laitance and form-release agents from concrete.
4. Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants. Nonporous joint substrates include the following:

    a. Metal.
    b. Glass.
    c. Porcelain enamel.
    d. Glazed surfaces of ceramic tile.

B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.

C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or

by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.3 INSTALLATION OF JOINT SEALANTS

A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.

B. Sealant Installation Standard: Comply with recommendations in ASTM C1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.

C. Install sealant backings of kind indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.

1. Do not leave gaps between ends of sealant backings.
2. Do not stretch, twist, puncture, or tear sealant backings.
3. Remove absorbent sealant backings that have become wet before sealant application, and replace them with dry materials.

D. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.

E. Install sealants using proven techniques that comply with the following and at the same time backings are installed:

1. Place sealants so they directly contact and fully wet joint substrates.
2. Completely fill recesses in each joint configuration.
3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.

F. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified in subparagraphs below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.

1. Remove excess sealant from surfaces adjacent to joints.
2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
3. Provide concave joint profile per Figure 8A in ASTM C1193 unless otherwise indicated.
4. Provide flush joint profile at locations indicated on Drawings according to Figure 8B in ASTM C1193.
5. Provide recessed joint configuration of recess depth and at locations indicated on Drawings according to Figure 8C in ASTM C1193.

    a. Use masking tape to protect surfaces adjacent to recessed tooled joints.

3.4 FIELD QUALITY CONTROL

A. Field-Adhesion Testing: Field test joint-sealant adhesion to joint substrates as follows:

1. Extent of Testing: Test completed and cured sealant joints as follows:

    a. Perform one test for each 1000 feet of joint length thereafter or one test per each floor per elevation.

2. Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1 in ASTM C1193 or Method A, Tail Procedure, in ASTM C1521.

    a. For joints with dissimilar substrates, verify adhesion to each substrate separately; extend cut along one side, verifying adhesion to opposite side. Repeat procedure for opposite side.

3. Inspect tested joints and report on the following:

    a. Whether sealants filled joint cavities and are free of voids.
    b. Whether sealant dimensions and configurations comply with specified requirements.
    c. Whether sealants in joints connected to pulled-out portion failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each kind of product and joint substrate. Compare these results to determine if adhesion complies with sealant manufacturer's field-adhesion hand-pull test criteria.

4. Record test results in a field-adhesion-test log. Include dates when sealants were installed, names of persons who installed sealants, test dates, test locations, whether joints were primed, adhesion results and percent elongations, sealant material, sealant configuration, and sealant dimensions.
5. Repair sealants pulled from test area by applying new sealants following same procedures used originally to seal joints. Ensure that original sealant surfaces are clean and that new sealant contacts original sealant.

B. Evaluation of Field-Adhesion-Test Results: Sealants not evidencing adhesive failure from testing or noncompliance with other indicated requirements will be considered satisfactory. Remove sealants that fail to adhere to joint substrates during testing or to comply with other requirements. Retest failed applications until test results prove sealants comply with indicated requirements.

3.5 CLEANING

A. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

3.6 PROTECTION

A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without

deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out, remove, and repair damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

3.7 JOINT-SEALANT SCHEDULE

A. Joint-Sealant Application: Exterior joints in vertical and horizontal nontraffic surfaces, Type 1.

1. Joint Locations:

a. Construction joints in cast-in-place concrete.
b. Joints between plant-precast Architectural concrete units.
c. Joints between metal panels.
d. Joints between different materials listed above.
e. Perimeter joints between materials listed above and frames of doors, windows and louvers.
f. Other joints as indicated on Drawings.

2. Joint Sealant:

a. Silicone, S, NS, 100/50, NT
b. Silicone, S, NS, 50, NT
c. Silicone, S, NS, 35, NT
d. Silicone, Nonstaining, S, NS, 100/50, NT
e. Silicone, Nonstaining, S, NS, 50, NT
f. Urethane, S, NS, 50, NT
g. Urethane, S, NS, 35, NT
h. Urethane, S, NS, 35, T
i. Urethane, S, NS, 25, NT
j. Urethane, M, NS, 50, T

B. Joint-Sealant Application: Exterior joints in horizontal or vertical traffic surfaces.

1. Joint Locations:

a. Isolation and contraction joints in cast-in-place concrete slabs.
b. Tile control and expansion joints.
c. Joints between different materials listed above.
d. Other joints as indicated on Drawings.

2. Joint Sealant:

a. Silicone, S, NS, 100/50, T, NT
b. Silicone, M, SL, 100/50, T, NT
c. Urethane, M, NS, 50, T
d. Urethane, M, NS, 25, T, NT
e. Urethane, M, P, 35, T, NT
f. Urethane, M, P, 25, T, NT

C. Joint-Sealant Application: Joints at sealing pipe penetrations for piping conveying materials up to 140 degrees F and fuel oil supply and fuel dispensing systems.

1. Joint Sealant: Polysulfide, M, NS, 25, T, NT.

D. Joint-Sealant Application: Mildew-resistant interior joints in vertical surfaces and horizontal nontraffic surfaces, non-security.

1. Joint Locations:

a. Joints between plumbing fixtures and adjoining walls, floors, and counters.
b. Tile control and expansion joints where indicated.
c. Other joints as indicated on Drawings.

2. Joint Sealant:

a. Silicone, mildew resistant, acid curing, S, NS, 25, NT.
b. Silicone, Mildew Resistant, Neutral Curing, S, NS, 50, NT

E. Joint-Sealant Application: Interior joints in vertical surfaces and horizontal nontraffic surfaces not subject to significant movement.

1. Joint Locations:

a. Control joints on exposed interior surfaces of exterior walls.
b. Perimeter joints between interior wall surfaces and frames of interior doors and windows.
c. Joints and cracks 3/16” or less in width.
d. Other joints as indicated on Drawings.

2. Joint Sealant:

a. Acrylic latex

F. Joint-Sealant Application: Concealed mastics.

1. Joint Locations:

a. Aluminum thresholds.
b. Sill plates.
c. Standing Seam Metal Roofing.
d. Other joints as indicated on Drawings.

2. Joint Sealant: Butyl-rubber based.

G. Joint-Sealant Application: High temperature joints over 140 degrees F.

1. Joint Locations:

a. Pipe penetrations.

2. Joint Sealant:

a. Silicone: Single-component sealant for high temperatures.

H. Joint-Sealant Application: hydrophobic sealant in horizontal surfaces.

1. Joint Locations:

a. Kitchens or wet locations where stainless steel grates abut tile or brick flooring.
b. Resistance to thermal shock.

2. Joint Sealant

a. Hydrophobic hybrid polyurethane.

END OF SECTION 079200

SECTION 081113 - HOLLOW METAL DOORS AND FRAMES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. Interior standard steel doors and frames.
2. Exterior standard steel doors and frames.

B. Related Requirements:
1. .
2. Section 087100 "Door Hardware" for door hardware for hollow-metal doors.

1.2 DEFINITIONS

A. Minimum Thickness: Minimum thickness of base metal without coatings according to NAAMM-HMMA 803 or ANSI/SDI A250.8.

1.3 COORDINATION

A. Coordinate anchorage installation for hollow-metal frames. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors. Deliver such items to Project site in time for installation.

B. Coordinate requirements for installation of door hardware, electrified door hardware, and access control and security systems.

1.4 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site**.**

1.5 SUBMITTALS

A. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions

B. Manufacturer’s installation instructions shall be provided along with product data.

C. Submittal’s shall be provided in the order in which they are specified and tabbed (for combined submittals).

D. Product Data: For each type of product.

E. Shop Drawings: Include the following:

1. Elevations of each door type.
2. Details of doors, including vertical- and horizontal-edge details and metal thicknesses.
3. Frame details for each frame type, including dimensioned profiles and metal thicknesses.
4. Locations of reinforcement and preparations for hardware.
5. Details of each different wall opening condition.
6. Details of electrical raceway and preparation for electrified hardware, access control systems, and security systems.
7. Details of anchorages, joints, field splices, and connections.
8. Details of accessories.
9. Details of moldings, removable stops, and glazing.

F. Samples for Initial Selection: For hollow-metal doors and frames with factory-applied color finishes.

G. Samples for Verification:

1. Finishes: For each type of exposed finish required, prepared on Samples of not less than 3 by 5 inches.
2. Fabrication: Prepare Samples approximately 12 by 12 inches to demonstrate compliance with requirements for quality of materials and construction:

a. Doors: Show vertical-edge, top, and bottom construction; core construction; and hinge and other applied hardware reinforcement. Include separate section showing glazing if applicable.
b. Frames: Show profile, corner joint, floor and wall anchors, and silencers. Include separate section showing fixed hollow-metal panels and glazing if applicable.

H. Product Schedule: For hollow-metal doors and frames, prepared by or under the supervision of supplier, using same reference numbers for details and openings as those on Drawings. Coordinate with final door hardware schedule.
1. Egress Door Inspector: Submit documentation of compliance with NFPA 101, Section 7.2.1.15.4.
2. .

I. Field quality control reports.

1.6 CLOSEOUT SUBMITTALS

A. Record Documents: For fire-rated doors, list of door numbers and applicable room name and number to which door accesses.

1.7 QUALITY ASSURANCE

1. Egress Door Inspector Qualifications: Inspector for field quality control inspections of egress door assemblies shall meet the qualifications set forth in NFPA 101, Section 7.2.1.15.4 and the following:

1.8 DELIVERY, STORAGE, AND HANDLING

A. Deliver hollow-metal doors and frames palletized, packaged, or crated to provide protection during transit and Project-site storage. Do not use non-vented plastic.

1. Provide additional protection to prevent damage to factory-finished units.

B. Deliver welded frames with two removable spreader bars across bottom of frames, tack welded to jambs and mullions.

C. Store hollow-metal doors and frames vertically under cover at Project site with head up. Place on minimum 4-inch high wood blocking. Provide minimum 1/4-inch space between each stacked door to permit air circulation.

PART 2 - PRODUCTS

2.1 INTERIOR STANDARD STEEL DOORS AND FRAMES

A. Construct hollow-metal doors and frames to comply with standards indicated for materials, fabrication, hardware locations, hardware reinforcement, tolerances, and clearances, and as specified.

B. Standard-Duty Doors and Frames: ANSI/SDI A250.8, Level 1; ANSI/SDI A250.4, Level C. At locations indicated in the Door and Frame Schedule.

1. Doors:

a. Type: As indicated in the Door and Frame Schedule.
b. Thickness: 1-3/4 inches.
c. Face: Metallic-coated steel sheet, minimum thickness of 0.032 inch.
d. Edge Construction: Model 2, Seamless.
e. Core: Manufacturer's standard

2. Frames:

a. Materials: Metallic-coated steel sheet, minimum thickness of 0.042 inch.
b. Construction: Full profile welded.

3. Exposed Finish: Prime.

4. Glazing: Provide glazing at doors as indicated on the drawings. Comply with requirements in Section 088000 "Glazing."

2.2 EXTERIOR STANDARD STEEL DOORS AND FRAMES

A. Construct hollow-metal doors and frames to comply with standards indicated for materials, fabrication, hardware locations, hardware reinforcement, tolerances, and clearances, and as specified.

B. Heavy-Duty Doors and Frames: ANSI/SDI A250.8, Level 2; ANSI/SDI A250.4, Level B. At locations indicated in the Door and Frame Schedule

1. Doors:

   a. Type: As indicated in the Door and Frame Schedule.
   b. Thickness: 1-3/4 inches.
   c. Face: Metallic-coated steel sheet, minimum thickness of 0.042 inch, with minimum A60 coating.
   d. Edge Construction: Model 2, Seamless.
   e. Top Edge Closures: Close top edges of doors with flush closures of same material as face sheets. Seal joints against water penetration.
   f. Bottom Edges: Close bottom edges of doors where required for attachment of weather stripping with end closures or channels of same material as face sheets. Provide weep-hole openings in bottoms of exterior doors to permit moisture to escape.
   g. Core: Vertical steel stiffener.

2. Frames:

   a. Materials: Metallic-coated steel sheet, minimum thickness of 0.053 inch, with minimum A60 coating.
   b. Construction: Full profile welded.

3. Exposed Finish: Prime
   a. .

2.3 FRAME ANCHORS

A. Jamb Anchors:

1. Type: Anchors of minimum size and type required by applicable door and frame standard, and suitable for performance level indicated.
2. Quantity: Minimum of three anchors per jamb, with one additional anchor for frames with no floor anchor. Provide one additional anchor for each 24 inches of frame height above 7 feet.

B. Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor.

C. Floor Anchors for Concrete Slabs with Underlayment: Adjustable-type anchors with extension clips, allowing not less than 2-inch height adjustment. Terminate bottom of frames at top of underlayment.

D. Material: ASTM A879, Commercial Steel (CS), 04Z coating designation; mill phosphatized.

1. For anchors built into exterior walls, steel sheet complying with ASTM A1008 or ASTM A1011; hot-dip galvanized according to ASTM A153, Class B.

2.4 MATERIALS

A. Cold-Rolled Steel Sheet: ASTM A1008, Commercial Steel (CS), Type B; suitable for exposed applications.

B. Inserts, Bolts, and Fasteners: Hot-dip galvanized according to ASTM A153.

C. Power-Actuated Fasteners in Concrete: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with clips or other accessory devices for attaching hollow-metal frames of type indicated.

D. Glazing: Comply with requirements in Section 088000 "Glazing."

2.5 FABRICATION

A. Hollow-Metal Frames: Fabricate in one piece except where handling and shipping limitations require multiple sections. Where frames are fabricated in sections, provide alignment plates or angles at each joint, fabricated of metal of same or greater thickness as frames.
1. Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise indicated.
2. Door Silencers: Except on weather-stripped frames, drill stops to receive door silencers as follows. Keep holes clear during construction.

    a. Single-Door Frames: Drill stop in strike jamb to receive three door silencers.

B. Hardware Preparation: Factory prepare hollow-metal doors and frames to receive templated mortised hardware, and electrical wiring; include cutouts, reinforcement, mortising, drilling, and tapping according to ANSI/SDI A250.6, the Door Hardware Schedule, and templates.

1. Reinforce doors and frames to receive nontemplated, mortised, and surface-mounted door hardware.
2. Comply with BHMA A156.115 for preparing hollow-metal doors and frames for hardware.

C. Glazed Lites: Provide stops and moldings around glazed lites where indicated. Form corners of stops and moldings with mitered hairline joints.

1. Provide stops and moldings flush with face of door, and with beveled stops unless otherwise indicated.
2. .
3. Provide fixed frame moldings on outside of exterior and on secure side of interior doors and frames. Provide loose stops and moldings on inside of hollow-metal doors and frames.
4. Coordinate rabbet width between fixed and removable stops with glazing and installation types indicated.

5. Provide stops for installation with countersunk flat- or oval-head machine screws spaced uniformly not more than 9 inches o.c. and not more than 2 inches o.c. from each corner.

2.6 STEEL FINISHES

A. Prime Finish: Clean, pretreat, and apply manufacturer's standard primer.

1. Shop Primer: Manufacturer's standard, fast-curing, lead- and chromate-free primer complying with ANSI/SDI A250.10; recommended by primer manufacturer for substrate; compatible with substrate and field-applied coatings despite prolonged exposure.

PART 3 - EXECUTION

3.1 PREPARATION

A. Remove welded-in shipping spreaders installed at factory. Restore exposed finish by grinding, filling, and dressing, as required to make repaired area smooth, flush, and invisible on exposed faces. Touch up factory-applied finishes where spreaders are removed.

B. Drill and tap doors and frames to receive non-templated, mortised, and surface-mounted door hardware.

3.2 INSTALLATION

A. Install hollow-metal doors and frames plumb, rigid, properly aligned, and securely fastened in place. Comply with approved Shop Drawings and with manufacturer's written instructions.

B. Hollow-Metal Frames: Comply with ANSI/SDI A250.11.

1. Set frames accurately in position; plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is complete, remove temporary braces without damage to completed Work.

a. Where frames are fabricated in sections, field splice at approved locations by welding face joint continuously; grind, fill, dress, and make splice smooth, flush, and invisible on exposed faces. Touch-up finishes.
b. Install frames with removable stops located on secure side of opening.

2. Floor Anchors: Secure with postinstalled expansion anchors.

a. Floor anchors may be set with power-actuated fasteners instead of postinstalled expansion anchors if so indicated and approved on Shop Drawings.

3. Installation Tolerances: Adjust hollow-metal frames to the following tolerances:

a. Squareness: Plus or minus 1/16 inch, measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
b. Alignment: Plus or minus 1/16 inch, measured at jambs on a horizontal line parallel to plane of wall.

c. Twist: Plus or minus 1/16 inch, measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.
d. Plumbness: Plus or minus 1/16 inch, measured at jambs at floor.

C. Hollow-Metal Doors: Fit and adjust hollow-metal doors accurately in frames, within clearances specified below.

D. Non-Fire-Rated Steel Doors: Comply with ANSI/SDI A250.8Glazing: Comply with installation requirements in Section 088000 "Glazing" and with hollow-metal manufacturer's written instructions.

3.3 FIELD QUALITY CONTROL

A. Inspection Agency: Engage a qualified inspector to perform inspections and to furnish reports to the Director’s Representative.

B. Inspections:
1. Egress Door Inspections: Inspect each door equipped with panic hardware, each door equipped with fire exit hardware, each door located in an exit enclosure, each electrically controlled egress door, and each door equipped with special locking arrangements according to NFPA 101, Section 7.2.1.15.

C. Repair or remove and replace installations where inspections indicate that they do not comply with specified requirements.

D. Reinspect repaired or replaced installations to determine if replaced or repaired door assembly installations comply with specified requirements.

3.4 REPAIR

A. Prime-Coat Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat and apply touchup of compatible air-drying, rust-inhibitive primer.

B. Metallic-Coated Surface Touchup: Clean abraded areas and repair with galvanizing repair paint according to manufacturer's written instructions.

END OF SECTION 081113

SECTION 083612 – INSULATED SECTIONAL OVERHEAD STEEL DOORS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Insulated Sectional Overhead Doors.

1.2 SUBMITTALS

A. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Manufacturer’s installation instructions shall be provided along with product data.

C. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).

D. Product Data: For each type and size of sectional door and accessory.

1. Include manufacturer’s installation instructions, construction details, material descriptions, dimensions of individual components, profile door sections, and finishes.
2. For power-operated doors, include rated capacities, operating characteristics, electrical characteristics, and furnished accessories.

E. Shop Drawings: For each installation and for components not dimensioned or detailed in manufacturer's product data.

1. Include plans, elevations, sections, and mounting details.
2. Include details of equipment assemblies. Indicate dimensions, required clearances, method of field assembly, components, and location and size of each field connection.
3. Include points of attachment and their corresponding static and dynamic loads imposed on structure.
4. Include diagrams for power, signal, and control wiring.

F. Samples: For each exposed product and for each color and texture specified, in manufacturer's standard size.

G. Quality Control Submittals:

1. Qualification Data: For Installer.

H. Contract Closeout Submittals:

1. Maintenance Data: For sectional doors to include in maintenance manuals.

a. Including replacement parts list.

2. Manufacturer's warranty.
3. Finish warranty.

1.3 QUALITY ASSURANCE

A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer for both installation and maintenance of units required for this Project.

B. Regulatory Requirements: Comply with provisions in the U.S. Department of Transportation's "ADA Standards for Transportation Facilities and Uniform Code A117.1 applicable to sectional doors.

1.4 WARRANTY

A. Manufacturer's Warranty: Manufacturer agrees to repair or replace components of sectional doors that fail in materials or workmanship within specified warranty period.

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

a. Structural failures including, but not limited to, excessive deflection.
b. Failure of components or operators before reaching required number of operation cycles.
c. Faulty operation of hardware.
d. Deterioration of metals, metal finishes, and other materials beyond normal weathering and use; rust through.
e. Delamination of exterior or interior facing materials.

2. Warranty Period: 10 years from date of Substantial Completion.

B. Finish Warranty: Manufacturer agrees to repair or replace components that show evidence of deterioration of factory-applied finishes within specified warranty period.

1. Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS, GENERAL

A. Source Limitations: Obtain sectional doors from single source from single manufacturer.

1. Obtain operators and controls from sectional door manufacturer.

2.2 PERFORMANCE REQUIREMENTS

A. General Performance: Provide sectional doors that comply with performance requirements specified without failure from defective manufacture, fabrication, installation, or other defects in construction and without requiring temporary installation of reinforcing components.

B. Structural Performance, Exterior Doors: Capable of withstanding the design wind loads.

1. Design Wind Load: Uniform pressure (velocity pressure) of 20 lbf/sq. ft., acting inward and outward.
2. Testing: In accordance with ASTM E330[or DASMA 108 for garage doors and complying with DASMA 108 acceptance criteria].
3. Deflection Limits: Design sectional doors to withstand design wind loads without evidencing permanent deformation or disengagement of door components.

    a. Deflection of door sections in horizontal position (open) shall not exceed 1/120 of door width.
    b. Deflection of horizontal track assembly shall not exceed 1/240 of door height.

4. Retain "Windborne-Debris Impact Resistance" paragraph if required.

C. Windborne-Debris Impact Resistance: Provide sectional doors complying with the following requirements:

1. Glazed Openings: Pass ASTM E1886 Large Missile Test and cyclic-pressure tests in accordance with ASTM E1996 for basic protection and Wind Zone applicable to basic design wind speed at project site.
2. Garage-Door Glazed Openings: Pass DASMA 115.

2.3 SECTIONAL-DOOR ASSEMBLY

A. Steel Sectional Door: Provide sectional door formed with hinged sections and fabricated so that finished door assembly is rigid and aligned with tight hairline joints; free of warp, twist, and deformation; and complies with requirements in DASMA 102.

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. C.H.I. Overhead Doors, Inc.
    b. Clopay Building Products.
    c. Overhead Door Corporation.
    d. Raynor Garage Doors.
    e. Rite-Hite Corporation.
    f. Wayne-Dalton Corp.
    g. Or equal.

2. Retain one option in "Operation Cycles" paragraph below. First option is standard. Second, Third, and fourth options are used for high-cycle operation, corrosive environments, and severe or abusive use. Consult manufacturers for recommendations.

B. Operation Cycles: Door components and operators capable of operating for not less than 50,000 operation cycles. One operation cycle is complete when door is opened from closed position to the open position and returned to closed position.

C. Air Infiltration: Maximum rate of 0.4 cfm/sq. ft. when tested in accordance with ASTM E283 or DASMA 105.

D. Insulation: Polystyrene

E. Thermal Values:

1. Polystyrene – Calculated section R-value of 7.35.

F. Partial Glazing of Steel Panels:

1. Insulated double strength glass, 24 inch by 7 inch (610 mm by 178 mm) window.

G. Steel Door Sections: ASTM A653, zinc-coated (galvanized), cold-rolled, commercial steel sheet with G90 zinc coating.

1. Door-Section Thickness: 2 inches
2. Section Faces:

a. Thermal-Break Construction: Provide sections with continuous thermal-break construction separating the exterior and interior faces of door.
b. Exterior Face: Fabricated from single sheets, not more than 24 inches high; with horizontal meeting edges rolled to continuous, interlocking, keyed, rabbeted, shiplap, or tongue-in-groove, weather- and pinch-resistant seals and reinforcing flange return.

1) Steel Sheet Thickness: 24 gauge, hot-dip galvanized.
2) Surface: Manufacturer's standard, ribbed.

c. Interior Face: Enclose insulation completely within steel exterior facing and interior facing material, with no exposed insulation. Provide the following interior-facing material:

1) Zinc-Coated (Galvanized) Steel Sheet: With minimum nominal coated thickness of 24 gauge.

3. End Stiles: Enclose open ends of sections with channel end stiles formed from galvanized-steel sheet not less than 16 gauge nominal coated thickness and welded to door section.
4. Intermediate Stiles: Provide intermediate stiles formed from not less than 16 gauge thick galvanized-steel sheet, cut to door section profile, and welded in place. Space stiles not more than 48 inches apart.
5. Section Reinforcing: Horizontal and diagonal reinforcement as required to stiffen door and for wind loading. Provide galvanized-steel bars, struts, trusses, or strip steel, formed to depth and bolted or welded in place. Ensure that reinforcement does not obstruct vision lites.

a. Bottom Section: Reinforce section with a continuous channel or angle conforming to bottom-section profile and allowing installation of astragal (weather seal).
b. Hardware Locations: Provide reinforcement for hardware attachment.

6. Thermal Insulation: Insulate interior of steel sections with door manufacturer's standard CFC-free insulation of type indicated below:

a. Board Insulation: Polystyrene, secured to exterior face sheet. Calculated section R-value of 7.35.
b. Fire-Resistance Characteristics: Maximum flame-spread and smoke-developed indexes of 75 and 450, respectively, in accordance with ASTM E84.

H. Track: Manufacturer's standard, galvanized-steel, standard-lift track system. Provide complete system including brackets, bracing, and reinforcement to ensure rigid support of ball-bearing roller guides.

1. Material: Galvanized steel, ASTM A653, minimum G60 zinc coating.
2. Size: As recommended in writing by manufacturer for door size, weight, track configuration and door clearances indicated on Drawings.
3. Track Reinforcement and Supports: Provide galvanized-steel members to support track without sag, sway, and vibration during opening and closing of doors. Slot vertical sections of track spaced 2 inches apart for door-drop safety device.

a. Vertical Track: Incline vertical track to ensure weathertight closure at jambs. Provide continuous angle attached to track and wall.
b. Horizontal Track: Provide continuous reinforcing angle from curve in track to end of track, attached to track and supported at points by laterally braced attachments to overhead structural members.

I. Weatherseals: Replaceable, adjustable, continuous, compressible weather-stripping gaskets of flexible vinyl, rubber, or neoprene fitted to bottom **top and jambs of door.**

A. Windows: Manufacturer's standard window units of shape and size and in locations indicated on Drawings. Set glazing in vinyl, rubber, or neoprene glazing channel. Provide removable stops of same material as door-section frames. Provide the following glazing:
1. Insulating Glass Units: Insulated double strength glass, 24 inches by 7 inches glazing.

B. Hardware: Heavy-duty, corrosion-resistant hardware, with hot-dip galvanized, stainless steel, or other corrosion-resistant fasteners, to suit door type.

1. Hinges: Heavy-duty, galvanized-steel hinges of not less than 0.079-inch nominal coated thickness at each end stile and at each intermediate stile, in accordance with manufacturer's written recommendations for door size.

a. Attach hinges to door sections through stiles and rails with bolts and lock nuts or lock washers and nuts. Use rivets or self-tapping fasteners where access to nuts is impossible.
b. Provide double-end hinges where required for doors more than 16 ft. wide unless otherwise recommended by door manufacturer in writing.

2. Rollers: Heavy-duty rollers with steel ball bearings in case-hardened steel races, mounted to suit slope of track. Extend roller shaft through both hinges where double hinges are required. Match roller-tire diameter to track width.

3. Push/Pull Handles: Equip each door with galvanized-steel lifting handles on each side of door, finished to match door.

C. Locking Device:

1. Locking Device Assembly: Fabricate with cylinder lock, spring-loaded deadbolt, operating handle, cam plate, and adjustable locking bars to engage through slots in tracks.

   a. Lock Cylinders: Cylinders comply standard with manufacturer
   b. Keys: Two for each cylinder.

D. Manual Door Operator:

1. Push-Up Operation: Lift handles and pull rope for raising and lowering doors located on inside and outside of bottom section; with counterbalance mechanism designed so that required lift or pull for door operation does not exceed 25 lbf.

E. Electric Door Operator: Electric door operator assembly of size and capacity recommended by door manufacturer for door and operation cycles specified, with electric motor and factory-prewired motor controls, starter, gear-reduction unit, solenoid-operated brake, clutch, control stations, control devices, integral gearing for locking door, and accessories required for proper operation.

1. Comply with NFPA 70.
2. Control equipment complying with NEMA ICS 1, NEMA ICS 2, and NEMA ICS 6; with NFPA 70, Class 2 control circuit, maximum 24 V ac or dc.
3. Safety: Listed in accordance with UL 325 by a qualified testing agency for commercial or industrial use; moving parts of operator enclosed or guarded if exposed and mounted at 8 ft. or lower.
4. Usage Classification: Standard duty, up to 25 cycles per hour and up to 90 cycles per day.
5. Operator Type: Manufacturer's standard for door requirements.
6. Motor: Reversible-type with controller (disconnect switch)] for interior, clean, and dry motor exposure. Use adjustable motor-mounting bases for belt-driven operators.

   a. Motor Size: As required to start, accelerate, and operate door in either direction from any position, at a speed not less than 8 in./sec. and not more than 12 in./sec., without exceeding nameplate ratings or service factor
   b. Electrical Characteristics:

      1) Phase: Single phase.
      2) Volts: 208 V.

7. Limit Switches: Equip motorized door with adjustable switches interlocked with motor controls and set to automatically stop door at fully opened and fully closed positions.
8. Obstruction Detection: Automatic external entrapment protection consisting of automatic safety sensor capable of protecting full width of door opening. Activation of device immediately stops and reverses downward door travel.

a. Monitored Entrapment Protection: Electric sensor edge on bottom section designed to interface with door-operator control circuit to detect damage to or disconnection of sensor and complying with requirements in UL 325.

9. Control Station: Flush mounted, three-position (open, close, and stop) control.

a. Operation: Push button.
b. Interior-Mounted Unit: Full-guarded, surface-mounted, standard-duty, weatherproof-type, NEMA ICS 6, Type 4 enclosure.

c. Features: Provide the following:

1) Vehicle detection operation.
2) Radio-control operation.
3) Card-reader control.
4) Photocell operation.
5) Door-timer operation.
6) Explosion- and dust-ignition-proof control wiring.
7) Audible and visual signals that comply with regulatory requirements for accessibility.

10. Emergency Manual Operation: Push-up type designed so required force for door operation does not exceed 25 lbf.
11. Emergency Operation Disconnect Device: Hand-operated disconnect mechanism for automatically engaging manual operator and releasing brake for emergency manual operation while disconnecting motor without affecting timing of limit switch. Mount mechanism so it is accessible from floor level. Include interlock device to automatically prevent motor from operating when emergency operator is engaged.
12. Motor Removal: Design operator so motor can be removed without disturbing limit-switch adjustment and without affecting emergency manual operation.

F. Metal Finish: Comply with NAAMM/NOMMA's "Metal Finishes Manual for Architectural and Metal Products (AMP 500-06)" for recommendations for applying and designating finishes.

1. Factory Prime Steel Finish: Compatible with field-applied finish and in manufacturer's standard color. Comply with coating manufacturer's written instructions for cleaning, pretreatment, application, and minimum dry film thickness.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for substrate construction and other conditions affecting performance of the Work.

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

3.2 INSTALLATION

A. Install sectional doors and operating equipment complete with necessary hardware, anchors, inserts, hangers, and equipment supports; in accordance with manufacturer's written instructions.

B. Tracks:

1. Fasten vertical track assembly to opening jambs and framing with fasteners spaced not more than 24 inches apart.
2. Hang horizontal track assembly from structural overhead framing with angles or channel hangers attached to framing by welding or bolting, or both. Provide sway bracing, diagonal bracing, and reinforcement as required for rigid installation of track and door-operating equipment.

C. Accessibility: Install sectional doors, switches, and controls along accessible routes in compliance with regulatory requirements for accessibility.

D. Power-Operated Doors: Install automatic garage doors openers in accordance with UL 325.

3.3 STARTUP SERVICES

A. Engage a Company Service Advisor to perform startup service.

1. Complete installation and startup checks in accordance with manufacturer's written instructions.
2. Test and adjust controls and safety devices. Replace damaged and malfunctioning controls and equipment.

3.4 ADJUSTING

A. Adjust hardware and moving parts to function smoothly so that doors operate easily, free of warp, twist, or distortion.

B. Lubricate bearings and sliding parts as recommended by manufacturer.

C. Adjust doors and seals to provide weather-resistant fit around entire perimeter.

D. Touchup Painting Galvanized Material: Immediately after welding galvanized materials, clean welds and abraded galvanized surfaces and repair galvanizing to comply with ASTM A780.

3.5 DEMONSTRATION

A. Engage a Company Service Advisor to train Director’s Representative's maintenance personnel to adjust, operate, and maintain sectional doors.

END OF SECTION 083613

SECTION 085113 - ALUMINUM WINDOWS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes aluminum windows for exterior locations.

1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
2. Review and discuss the finishing of aluminum windows that is required to be coordinated with the finishing of other aluminum work for color and finish matching.
3. Review, discuss, and coordinate the interrelationship of aluminum windows with other exterior wall components. Include provisions for anchoring, flashing, weeping, sealing perimeters, and protecting finishes.
4. Review and discuss the sequence of work required to construct a watertight and weathertight exterior building envelope.
5. Inspect and discuss the condition of substrate and other preparatory work performed by other trades.

1.3 SUBMITTALS

A. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Manufacturer’s installation instructions shall be provided along with product data.

C. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).

D. Product Data: For each type of product.

1. Include construction details, material descriptions, glazing and fabrication methods, dimensions of individual components and profiles, hardware, and finishes for aluminum windows.
2. Include manufacturer’s installation instructions.

E. Shop Drawings: For aluminum windows.

1. Include plans, elevations, sections, hardware, accessories, insect screens, operational clearances, and details of installation, including anchor, flashing, and sealant installation.

F. Samples: Corner section for each type of window unit and for each color specified, 8 by 8 inches in size.

1. Include as part of corner section: frame, sash, and insect screen.
2. Provide manufacturer's standard color finishes for selection.

G. Samples: One full size unit, including insect screen and hardware.

1. Provide manufacturer's standard color finishes for selection.

H. Product Schedule: For aluminum windows. Use same designations indicated on Drawings.

I. Quality Control Submittals:

1. Qualification Data: For manufacturer and Installer.

a. Names and address of 3 similar projects that Installer has worked on during the past 5 years.

2. Product Test Reports: For each type of aluminum window, for tests performed by a qualified testing agency.
3. Field quality-control reports.
4. Sample Warranties: For manufacturer's warranties.

1.4 QUALITY ASSURANCE

A. Manufacturer Qualifications: A manufacturer capable of fabricating aluminum windows that meet or exceed performance requirements indicated and of documenting this performance by test reports and calculations.

B. Installer Qualifications: An installer acceptable to aluminum window manufacturer for installation of units required for this Project and have a minimum three years' experience.

C. Label: each window unit shall have a AAMA or WDMA Certification label affixed to it.

D. Benchmark: Build benchmark to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for materials and execution.

1. Build benchmark of typical wall area as shown on Drawings.
2. Approval of benchmarks does not constitute approval of deviations from the Contract Documents contained in mockups unless Director's Representative specifically approves such deviations in writing.
3. Subject to compliance with requirements, approved benchmarks may become part of the completed Work if undisturbed at time of Substantial Completion.

1.5 WARRANTY

A. Manufacturer's Warranty: Manufacturer agrees to repair or replace aluminum windows that fail in materials or workmanship within specified warranty period.

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

a. Failure to meet performance requirements.
b. Structural failures including excessive deflection, water leakage, condensation, and air infiltration.
c. Faulty operation of movable sash and hardware.
d. Deterioration of materials and finishes beyond normal weathering.
e. Failure of insulating glass.

2. Warranty Period:

a. Window: 10 years from date of Substantial Completion.
b. Glazing Units: 10 years from date of Substantial Completion.
c. Aluminum Finish: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Source Limitations: Obtain aluminum windows from single source from single manufacturer.

2.2 WINDOW PERFORMANCE REQUIREMENTS

A. Product Standard: Comply with AAMA/WDMA/CSA 101/I.S.2/A440 for definitions and minimum standards of performance, materials, components, accessories, and fabrication unless more stringent requirements are indicated.

1. Window Certification: AAMA certified with label attached to each window.

B. Performance Class and Grade: AAMA/WDMA/CSA 101/I.S.2/A440 as follows:

1. Minimum Performance Class: CW.
2. Minimum Performance Grade: 35.

C. Thermal Transmittance: NFRC 100 maximum whole-window U-factor of 0.28 Btu/sq. ft. x h x deg F .

D. Solar Heat-Gain Coefficient (SHGC): NFRC 200 maximum whole-window SHGC of 0.40.

E. Condensation-Resistance Factor (CRF): Provide aluminum windows tested for thermal performance according to AAMA 1503, showing a CRF of 52.

F. Thermal Movements: Provide aluminum windows, including anchorage, that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

1. Temperature Change: 120 deg F ambient; 180 deg F material surfaces.

G. Sound Transmission Class (STC): Rated for not less than 30 STC when tested for laboratory sound transmission loss according to ASTM E90 and determined by ASTM E413.

H. Outside-Inside Transmission Class (OITC): Rated for not less than 30 OITC when tested for laboratory sound transmission loss according to ASTM E90 and determined by ASTM E1332.

I. Windborne-Debris Impact Resistance: Passes ASTM E1886 missile-impact and cyclic-pressure tests in accordance with ASTM E1996 for Wind Zone 2 for enhanced protection.

1. Large-Missile Test: For glazing located within 30 feet of grade.
2. Small-Missile Test: For glazing located between 30 feet and 60 feet above grade.

2.3 ALUMINUM WINDOWS

A. Types: Provide the following types in locations indicated on Drawings:
1. Horizontal sliding.
2. Fixed.

B. Frames and Sashes: Aluminum extrusions complying with AAMA/WDMA/CSA 101/I.S.2/A440.

1. Thermally Improved Construction: Fabricate frames, sashes, and muntins with an integral, concealed, low-conductance thermal barrier located between exterior materials and window members exposed on interior side in a manner that eliminates direct metal-to-metal contact.

C. Insulating-Glass Units: ASTM E2190.

1. Glass: ASTM C1036, Type 1, Class 1, q3.

a. Tint: Clear.
b. Kind: Fully tempered.
2. Filling: Fill space between glass lites with argon.
3. Low-E Coating: Sputtered on second surface.
4. Integral Louver Blinds: Glass manufacturer's standard, horizontal louver blinds with aluminum slats and polyester fiber cords, located in space between glass lites, and operated by hardware located on inside face of sash.

a. Operation: Tilt, raising, and lowering.
b. Color: As selected by Director’s Representative from manufacturer's full range.

D. Glazing System: Manufacturer's standard factory-glazing system that produces weathertight seal.

E. Hardware, General: Provide manufacturer's standard hardware fabricated from aluminum, stainless steel, carbon steel complying with AAMA 907, or other corrosion-resistant material compatible with adjacent materials; designed to smoothly operate, tightly close, and securely lock windows, and sized to accommodate sash weight and dimensions.

1. Exposed Hardware Color and Finish: As selected by Director’s Representative from manufacturer's full range.

F. Horizontal-Sliding Window Hardware:

1. Sill Cap/Track: Manufacturer's standard, Finish as selected by Director’s Representative of dimensions and profile indicated; designed to comply with performance requirements indicated and to drain to the exterior.
2. Locks and Latches: Allow unobstructed movement of the sash across adjacent sash in direction indicated and operated from the inside only. Provide key-operated custodial locks.
3. Roller Assemblies: Low-friction design.

G. Weather Stripping: Provide full-perimeter weather stripping for each operable sash unless otherwise indicated.

H. Fasteners: Noncorrosive and compatible with window members, trim, hardware, anchors, and other components.

1. Exposed Fasteners: Do not use exposed fasteners to greatest extent possible. For application of hardware, use fasteners that match finish hardware being fastened.

2.4 ACCESSORIES

A. Horizontal Louver Blinds: Provide manufacturer's standard, removable, horizontal louver blinds with aluminum slats and polyester fiber cords that are operated by hardware located on inside face of sash.

1. Operation: Tilt, raising, and lowering.
2. Color: As selected by Director’s Representative from manufacturer's full range.

B. Subsills: Thermally broken, extruded-aluminum subsills in configurations indicated on Drawings.

C. Column Covers: Extruded-aluminum profiles in sizes and configurations indicated on Drawings.

D. Interior Trim: Extruded-aluminum profiles in sizes and configurations indicated on Drawings.

E. Panning Trim: Extruded-aluminum profiles in sizes and configurations indicated on Drawings.

F. Receptor System: Two-piece, snap-together, thermally broken, extruded-aluminum receptor system that anchors windows in place.

2.5 INSECT SCREENS

A. General: Fabricate insect screens to integrate with window frame. Provide screen for each operable exterior sash. Screen wickets are not permitted.

1. Type and Location: Half, outside for sliding sashes.

B. Aluminum Frames: Manufacturer's standard aluminum alloy complying with SMA 1004 or SMA 1201. Fabricate frames with mitered or coped joints or corner extrusions, concealed fasteners, and removable PVC spline/anchor concealing edge of frame.

1. Tubular Framing Sections and Cross Braces: Roll formed from aluminum sheet.

C. Aluminum Wire Fabric: 18-by-16 mesh of 0.011-inch-diameter, coated aluminum wire.

1. Wire-Fabric Finish: Charcoal gray.

2.6 FABRICATION

A. Fabricate aluminum windows in sizes indicated. Include a complete system for assembling components and anchoring windows.

B. Glaze aluminum windows in the factory.

C. Weather strip each operable sash to provide weathertight installation.

D. Weep Holes: Provide weep holes and internal passages to conduct infiltrating water to exterior.

E. Provide water-shed members above side-hinged sashes and similar lines of natural water penetration.

F. Mullions: Provide mullions and cover plates, matching window units, complete with anchors for support to structure and installation of window units. Allow for erection tolerances and provide for movement of window units due to thermal expansion and building deflections. Provide mullions and cover plates capable of withstanding design wind loads of window units.

G. Complete fabrication, assembly, finishing, hardware application, and other work in the factory to greatest extent possible. Disassemble components only as necessary for shipment and installation.

2.7 GENERAL FINISH REQUIREMENTS

A. Comply with NAAMM's "Metal Finishes Manual" for recommendations for applying and designating finishes.

B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

C. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

2.8 ALUMINUM FINISHES

A. Finish designations prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.

B. Class II, Color Anodic Finish: AA-M12C22A32/A34 (Mechanical Finish: nonspecular as fabricated; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class II, integrally colored or electrolytically deposited color coating 0.010 mm or thicker) complying with AAMA 611.

1. Color: Dark bronze.

C. Class I, Color Anodic Finish: AA-M12C22A42/A44 (Mechanical Finish: nonspecular as fabricated; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class I, integrally colored or electrolytically deposited color coating 0.018 mm or thicker) complying with AAMA 611.

1. Color: Dark bronze.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine openings, substrates, structural support, anchorage, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Verify rough opening dimensions, levelness of sill plate, and operational clearances.

C. Examine wall flashings, vapor retarders, water and weather barriers, and other built-in components to ensure weathertight window installation.

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

3.2 INSTALLATION

A. Comply with manufacturer's written instructions for installing windows, hardware, accessories, and other components. For installation procedures and requirements not addressed in manufacturer's written instructions, comply with installation requirements in ASTM E2112.

B. Install windows level, plumb, square, true to line, without distortion or impeding thermal movement, anchored securely in place to structural support, and in proper relation to wall flashing and other adjacent construction to produce weathertight construction.

C. Install windows and components to drain condensation, water penetrating joints, and moisture migrating within windows to the exterior.

D. Separate aluminum and other corrodible surfaces from sources of corrosion or electrolytic action at points of contact with other materials.

3.3 FIELD QUALITY CONTROL

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

1. Testing and inspecting agency will interpret tests and state in each report whether tested work complies with or deviates from requirements.

B. Testing Services: Testing and inspecting of installed windows shall take place as follows:

1. Testing Methodology: Testing of windows for air infiltration and water resistance shall be performed according to AAMA 502.
2. Air-Infiltration Testing:

    a. Test Pressure: That required to determine compliance with AAMA/WDMA/CSA 101/I.S.2/A440 performance class indicated.
    b. Allowable Air-Leakage Rate: 1.5 times the applicable AAMA/WDMA/CSA 101/I.S.2/A440 rate for product type and performance class rounded down to one decimal place.

3. Water-Resistance Testing:

    a. Test Pressure: Two-thirds times test pressure required to determine compliance with AAMA/WDMA/CSA 101/I.S.2/A440 performance grade indicated.
    b. Allowable Water Infiltration: No water penetration.

4. Testing Extent: Three windows of each type as selected by Director's Representative and a qualified independent testing and inspecting agency. Windows shall be tested after perimeter sealants have cured.
5. Test Reports: Prepared according to AAMA 502.

C. Windows will be considered defective if they do not pass tests and inspections.

D. Prepare test and inspection reports.

3.4 ADJUSTING, CLEANING, AND PROTECTION

A. Adjust operating sashes and hardware for a tight fit at contact points and weather stripping for smooth operation and weathertight closure.

B. Clean exposed surfaces immediately after installing windows. Avoid damaging protective coatings and finishes. Remove excess sealants, glazing materials, dirt, and other substances.

1. Keep protective films and coverings in place until final cleaning.

C. Remove and replace glass that has been broken, chipped, cracked, abraded, or damaged during construction period.

D. Protect window surfaces from contact with contaminating substances resulting from construction operations. If contaminating substances do contact window surfaces, remove contaminants immediately according to manufacturer's written instructions.

END OF SECTION 085113

SECTION 087100 - DOOR HARDWARE

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. Mechanical door hardware for the following:

a. Swinging doors.
b. Bi-Folding doors.

2. Cylinders for door hardware specified in other Sections.
3. Electrified door hardware.

B. References

1. NFPA 80 Fire Doors and Windows
2. NFPA 101 Life Safety Code.
3. Building Code of New York State.
4. ICC/ANSI A117.1-2003 Accessible and Usable Buildings and Facilities.
5. ANSI/BHMA Standard A156.1 Butts and Hinges.
6. ANSI/BHMA Standard A156.4 Door Controls – Closers.
7. ANSI/BHMA Standard A156.6 Architectural Door Trim.
8. ANSI/BHMA Standard A156.7 Template Hinge Dimensions.
9. ANSI/BHMA Standard A156.8 Door Controls – Overhead Stops and Holders.
10. ANSI/BHMA Standard A156.13 Mortise Locks and Latches Series 1000.
11. ANSI/BHMA Standard A156.16 Auxiliary Hardware.
12. ANSI/BHMA Standard A156.18 Materials and Finishes.
13. ANSI/BHMA Standard A156.22 Door Gasketing Systems.
14. ANSI/BHMA Standard A156.26 Continuous Hinges.
15. DHI - Door and Hardware Institute.
16. NAAM Standard HMMA 800-96- Hollow Metal Manufacturers Association.
17. NAAM Standard HMMA 831-97 Recommended Hardware Locations for Custom Hollow Metal Doors and Frames.
18. 2010 Standards for State and Local Government Facilities: Title II.

1.3 DEFINITIONS

A. Architectural Hardware Consultant (AHC): A Door and Hardware Institute certified expert in complex architectural openings requiring advanced knowledge of model building codes and safety standards, ADA requirements, access control knowledge and installation expertise.

B. Architectural Hardware Distributor: A company that regularly purchases architectural hardware from manufacturers and specializes in the sale, service and support of that hardware to contractors and/or end users.

C. Company Field Advisor(s): Hardware manufacturers' representatives who are certified in writing by manufacturer to be technically qualified in design, installation, and servicing of products.

D. Installation Supervisor: Designated supervisor/installer, who has a minimum three years experience in finish hardware installation, and is qualified and responsible to ensure approved finish hardware is installed, adjusted, and operates properly.

1.4 COORDINATION

A. Floor-Recessed Door Hardware: Coordinate layout and installation with floor construction.

1. Cast anchoring inserts into concrete.

B. Installation Templates: Distribute for doors, frames, and other work specified to be factory prepared. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.

C. Security: Coordinate installation of door hardware, keying, and access control with Director's Representative's security consultant.

D. Electrical System Roughing-In: Coordinate layout and installation of electrified door hardware with connections to power supplies and building safety and security systems.

E. Existing Openings: Where hardware components are scheduled for application to existing construction or where modifications to existing door hardware are required, field verify existing conditions and coordinate installation of door hardware to suit opening conditions and to provide proper door operation.

1.5 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.6 SUBMITTALS

A. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions

B. Manufacturer's installation instructions shall be provided along with product data.

C. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).

D. Product Data: For each type of product.

1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.

E. Shop Drawings: For electrified door hardware.

1. Include diagrams for power, signal, and control wiring.
2. Include details of interface of electrified door hardware and building safety and security systems.

F. Samples: For each exposed product in each finish specified, in manufacturer's standard size.

1. Tag Samples with full product description to coordinate Samples with door hardware schedule.

G. Samples for Initial Selection: For each type of exposed finish.

H. Samples for Verification: For each type of exposed product, in each finish specified.

1. Sample Size: Full-size units or minimum 2-by-4-inch Samples for sheet and 4-inch long Samples for other products.

a. Full-size Samples will be returned to Contractor. Units that are acceptable and remain undamaged through submittal, review, and field comparison process may, after final check of operation, be incorporated into the Work, within limitations of keying requirements.

2. Tag Samples with full product description to coordinate Samples with door hardware schedule.

I. Door Hardware Schedule: Prepared by or under the supervision of Installer's Architectural Hardware Consultant. Coordinate door hardware schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.

1. Submittal Sequence: Submit door hardware schedule concurrent with submissions of Product Data, Samples, and Shop Drawings. Coordinate submission of door hardware schedule with scheduling requirements of other work to facilitate the fabrication of other work that is critical in Project construction schedule.
2. Format: Use same scheduling sequence and format and use same door numbers as in door hardware schedule in the Contract Documents.
3. Content: Include the following information:

a. Identification number, location, hand, fire rating, size, and material of each door and frame.
b. Locations of each door hardware set, cross-referenced to Drawings on floor plans and to door and frame schedule.

c. Complete designations, including name and manufacturer, type, style, function, size, quantity, function, and finish of each door hardware product.
d. Description of electrified door hardware sequences of operation and interfaces with other building control systems.
e. Fastenings and other installation information.
f. Explanation of abbreviations, symbols, and designations contained in door hardware schedule.
g. Mounting locations for door hardware.
h. List of related door devices specified in other Sections for each door and frame.

J. Keying Schedule: Prepared by or under the supervision of Installer's Architectural Hardware Consultant, detailing Director’s Representative’s final keying instructions for locks. Include schematic keying diagram and index each key set to unique door designations that are coordinated with the Contract Documents.

K. Qualification Data: For Installer

L. Product Certificates: For each type of electrified door hardware.

1. Certify that door hardware for use on each type and size of labeled fire-rated doors complies with listed fire-rated door assemblies.

M. Product Test Reports: For compliance with accessibility requirements, for tests performed by manufacturer and witnessed by a qualified testing agency, for door hardware on doors located in accessible routes.

N. Field quality-control reports.

O. Sample Warranty: For special warranty.

1.7 CLOSEOUT SUBMITTALS

A. Maintenance Data: For each type of door hardware to include in maintenance manuals.

B. Schedules: Final door hardware and keying schedule.

1.8 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Door Hardware: 2.
2. Electrical Parts: 2

1.9 QUALITY ASSURANCE

A. Installer Qualifications: Supplier of products and an employer of workers trained and approved by product manufacturers and of an Architectural Hardware Consultant who is available during

the course of the Work to consult Contractor and Director’s Representative about door hardware and keying.

1. Warehousing Facilities: In Project's vicinity.
2. Scheduling Responsibility: Preparation of door hardware and keying schedule.
3. Engineering Responsibility: Preparation of data for electrified door hardware, including Shop Drawings, based on testing and engineering analysis of manufacturer's standard units in assemblies similar to those indicated for this Project.

1.10 DELIVERY, STORAGE, AND HANDLING

A. Inventory door hardware on receipt and provide secure lock-up for door hardware delivered to Project site.

B. Tag each item or package separately with identification coordinated with the final door hardware schedule, and include installation instructions, templates, and necessary fasteners with each item or package.

C. Deliver keys to manufacturer of key control system for subsequent delivery to Director’s Representative.

D. Deliver keys and permanent cores to Director’s Representative by registered mail or overnight package service.

1.11 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of door hardware that fail in materials or workmanship within specified warranty period.

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

a. Structural failures including excessive deflection, cracking, or breakage.
b. Faulty operation of doors and door hardware.
c. Deterioration of metals, metal finishes, and other materials beyond normal weathering and use.

2. Warranty Period: 10 years from date of Substantial Completion

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Source Limitations: Obtain each type of door hardware from single manufacturer.

1. Provide electrified door hardware from same manufacturer as mechanical door hardware unless otherwise indicated. Manufacturers that perform electrical modifications and that

are listed by a testing and inspecting agency acceptable to authorities having jurisdiction are acceptable.

2.2 PERFORMANCE REQUIREMENTS

A. Fire-Rated Door Assemblies: Where fire-rated doors are indicated, provide door hardware complying with NFPA 80 that is listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at positive pressure according to NFPA 252 or UL 10C.

B. Smoke- and Draft-Control Door Assemblies: Where smoke- and draft-control door assemblies are required, provide door hardware that complies with requirements of assemblies tested according to UL 1784 and installed in compliance with NFPA 105.

1. Air Leakage Rate: Maximum air leakage of 0.3 cfm/sq. ft. at the tested pressure differential of 0.3-inch wg of water.

C. Electrified Door Hardware: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

D. Means of Egress Doors: Latches do not require more than 15 lbf to release the latch. Locks do not require use of a key, tool, or special knowledge for operation.

E. Accessibility Requirements: For door hardware on doors in an accessible route, comply with the USDOJ's "2010 ADA Standards for Accessible Design.

1. Provide operating devices that do not require tight grasping, pinching, or twisting of the wrist and that operate with a force of not more than 5 lbf.
2. Comply with the following maximum opening-force requirements:

    a. Interior, Non-Fire-Rated Hinged Doors: 5 lbf applied perpendicular to door.
    b. Sliding or Folding Doors: 5 lbf applied parallel to door at latch.
    c. Fire Doors: Minimum opening force allowable by authorities having jurisdiction.

3. Bevel raised thresholds with a slope of not more than 1:2. Provide thresholds not more than 1/2 inch high.
4. Adjust door closer sweep periods so that, from an open position of 90 degrees, the door will take at least 5 seconds to move to a position of 12 degrees from the latch.
5. Adjust spring hinges so that, from an open position of 70 degrees, the door will take at least 1.5 seconds to move to the closed position.

2.3 HINGES

A. Hinges: BHMA A156.1. Provide template-produced hinges for hinges installed on hollow-metal doors and hollow-metal frames.

2.4 MECHANICAL LOCKS AND LATCHES

A. Lock Functions: As indicated in door hardware schedule.

B. Mortise Locks: BHMA A156.13; Operational Grade 1; stamped steel case with steel or brass parts; Series 1000.

2.5 AUXILIARY LOCKS

A. Mortise Auxiliary Locks: BHMA A156.36; Grade 1; with strike that suits frame.

B. Push-Button Combination Locks: BHMA A156.36; cylindrical; Grade 1; lock opens by entering a one- to five-digit code by pushing correct buttons in correct sequence; automatically relocks when door is closed; with strike that suits frame.

2.6 ELECTRIC STRIKES

A. Electric Strikes: BHMA A156.31; Grade 1; with faceplate to suit lock and frame.

2.7 ELECTROMAGNETIC LOCKS

A. Electromagnetic Locks: BHMA A156.23; electrically powered; with electromagnet attached to frame and armature plate attached to door; full-exterior or full-interior type, as required by application indicated.

B. Delayed-Egress Electromagnetic Locks: BHMA A156.24, electrically powered, with electromagnet attached to frame and armature plate attached to door; depressing push bar for more than three seconds initiates irreversible alarm and adjustable time delay for egress. When integrated with fire alarm, fire alarm voids time delay.

2.8 EXIT LOCKS AND EXIT ALARMS

A. Exit Locks and Alarms: BHMA A156.29, Grade 1.

2.9 SURFACE BOLTS

A. Surface Bolts: BHMA A156.16.

2.10 MANUAL FLUSH BOLTS

A. Manual Flush Bolts: BHMA A156.16; minimum 3/4-inch throw; designed for mortising into door edge.

2.11 EXIT DEVICES AND AUXILIARY ITEMS

A. Exit Devices and Auxiliary Items: BHMA A156.3.

2.12 LOCK CYLINDERS

A. Standard Lock Cylinders: BHMA A156.5; **Grade 1** permanent cores; face finished to match lockset.

1. Core Type: Removable.

2.13 KEYING

A. Keying System: Factory registered, complying with guidelines in BHMA A156.28, appendix. Provide one extra key blank for each lock.

1. No Master Key System: Only change keys operate cylinders.

a. Provide three cylinder change keys.

2. Master Key System: Change keys and a master key operate cylinders.

a. Provide three cylinder change keys and five master keys.

3. Grand Master Key System: Change keys, a master key, and a grand master key operate cylinders.

a. Provide three cylinder change keys and five each of master and grand master keys.

4. Great-Grand Master Key System: Change keys, a master key, a grand master key, and a great-grand master key operate cylinders.

a. Provide three cylinder change keys and five each of master, grand master, and great-grand master keys.

5. Existing System:

a. Master key or grand master key locks to existing system.
b. Re-key existing master key system into new keying system.

6. Keyed Alike: Key all cylinders to same change key.

B. Keys: Nickel silver.

1. Stamping: Permanently inscribe each key with a visual key control number and include the following notation:

a. Notation: Information to be furnished by Director’s Representative.

2.14 KEY CONTROL SYSTEM

A. Key Lock Boxes: Designed for storage of 10 keys.

2.15 OPERATING TRIM

A. Operating Trim: BHMA A156.6; stainless steel unless otherwise indicated.

2.16 SURFACE CLOSERS

A. Surface Closers: BHMA A156.4; rack-and-pinion hydraulic type with adjustable sweep and latch speeds controlled by key-operated valves and forged-steel main arm. Comply with manufacturer's written instructions for size of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Provide factory-sized closers, adjustable to meet field conditions and requirements for opening force.

2.17 CONCEALED CLOSERS

A. Concealed Closers: BHMA A156.4; rack-and-pinion hydraulic type with adjustable sweep and latch speeds controlled by key-operated valves. Comply with manufacturer's written instructions for size of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Provide factory-sized closers, adjustable to meet field conditions and requirements for opening force.

2.18 CLOSER HOLDER RELEASE DEVICES

A. Closer Holder Release Devices: BHMA A156.15; Grade 1; closer connected with separate or integral releasing and fire- or smoke-detecting devices. Door shall become self-closing on interruption of signal to release device. Automatic release is activated by loss of power.

2.19 MECHANICAL STOPS AND HOLDERS

A. Wall- and Floor-Mounted Stops: BHMA A156.16.

2.20 OVERHEAD STOPS AND HOLDERS

A. Overhead Stops and Holders: BHMA A156.8.

2.21 DOOR GASKETING

A. Door Gasketing: BHMA A156.22; with resilient or flexible seal strips that are easily replaceable and readily available from stocks maintained by manufacturer.

B. Maximum Air Leakage: When tested according to ASTM E283 with tested pressure differential of 0.3-inch wg, as follows:

1. Smoke-Rated Gasketing: 0.3 cfm/sq. ft. of door opening.
2. Gasketing on Single Doors: 0.3 cfm/sq. ft. of door opening.
3. Gasketing on Double Doors: 0.50 cfm per ft. of door opening.

2.22 THRESHOLDS

A. Thresholds: BHMA A156.21; fabricated to full width of opening indicated.

2.23 FOLDING DOOR HARDWARE

A. General: BHMA A156.14; complete sets including overhead rails, hangers, supports, bumpers, floor guides, and accessories indicated.

2.24 METAL PROTECTIVE TRIM UNITS

A. Metal Protective Trim Units: BHMA A156.6; fabricated from 0.050-inch thick stainless steel; with manufacturer's standard machine or self-tapping screw fasteners.

2.25 AUXILIARY DOOR HARDWARE

A. Auxiliary Hardware: BHMA A156.16.

2.26 FABRICATION

A. Manufacturer's Nameplate: Do not provide products that have manufacturer's name or trade name displayed in a visible location except in conjunction with required fire-rating labels and as otherwise approved by Director’s Representative.

1. Manufacturer's identification is permitted on rim of lock cylinders only.

B. Base Metals: Produce door hardware units of base metal indicated, fabricated by forming method indicated, using manufacturer's standard metal alloy, composition, temper, and hardness. Furnish metals of a quality equal to or greater than that of specified door hardware units and BHMA A156.18.

C. Fasteners: Provide door hardware manufactured to comply with published templates prepared for machine, wood, and sheet metal screws. Provide screws that comply with commercially recognized industry standards for application intended, except aluminum fasteners are not permitted. Provide Phillips flat-head screws with finished heads to match surface of door hardware unless otherwise indicated.

1. Concealed Fasteners: For door hardware units that are exposed when door is closed, except for units already specified with concealed fasteners. Do not use through bolts for

installation where bolt head or nut on opposite face is exposed unless it is the only means of securely attaching the door hardware. Where through bolts are used on hollow door and frame construction, provide sleeves for each through bolt.

2. Gasketing Fasteners: Provide noncorrosive fasteners for exterior applications and elsewhere as indicated.

2.27 FINISHES

A. Provide finishes complying with BHMA A156.18 as indicated in door hardware schedule.

B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

C. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine doors and frames, with Installer present, for compliance with requirements for installation tolerances, labeled fire-rated door assembly construction, wall and floor construction, and other conditions affecting performance of the Work.

B. Examine roughing-in for electrical power systems to verify actual locations of wiring connections before electrified door hardware installation.

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

3.2 PREPARATION

A. Steel Doors and Frames: For surface-applied door hardware, drill and tap doors and frames according to ANSI/SDI A250.6.

B. Wood Doors: Comply with door and hardware manufacturers' written instructions.

3.3 INSTALLATION

A. Mounting Heights: Mount door hardware units at heights **to comply with the following** unless otherwise indicated or required to comply with governing regulations.

1. Standard Steel Doors and Frames: ANSI/SDI A250.8.

2. Wood Doors: DHI's "Recommended Locations for Architectural Hardware for Wood Flush Doors."

B. Install each door hardware item to comply with manufacturer's written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work. Do not install surface-mounted items until finishes have been completed on substrates involved.

1. Set units level, plumb, and true to line and location. Adjust and reinforce attachment substrates as necessary for proper installation and operation.
2. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.

C. Hinges: Install types and in quantities indicated in door hardware schedule, but not fewer than the number recommended by manufacturer for application indicated or one hinge for every 30 inches of door height, whichever is more stringent, unless other equivalent means of support for door, such as spring hinges or pivots, are provided.

D. Intermediate Offset Pivots: Where offset pivots are indicated, provide intermediate offset pivots in quantities indicated in door hardware schedule, but not fewer than one intermediate offset pivot per door and one additional intermediate offset pivot for every 30 inches of door height greater than 90 inches.

E. Lock Cylinders: Install construction cores to secure building and areas during construction period.

1. Replace construction cores with permanent cores as directed by Director’s Representative.
2. Furnish permanent cores to Director’s Representative for installation.

F. Key Control System:

1. Key Control Cabinet: Tag keys and place them on markers and hooks in key control system cabinet, as determined by final keying schedule.
2. Key Lock Boxes: Install where indicated or approved by Director’s Representative to provide controlled access for fire and medical emergency personnel.
3. Key Control System Software: Set up multiple-index system based on final keying schedule.

G. Thresholds: Set thresholds for exterior doors and other doors indicated in full bed of sealant complying with requirements specified in Section 079200 "Joint Sealants."

H. Stops: Provide floor stops for doors unless wall or other type stops are indicated in door hardware schedule. Do not mount floor stops where they will impede traffic.

I. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame.

1. Do not notch perimeter gasketing to install other surface-applied hardware.

J. Meeting Stile Gasketing: Fasten to meeting stiles, forming seal when doors are closed.

K. Door Bottoms: Apply to bottom of door, forming seal with threshold when door is closed.

3.4 FIELD QUALITY CONTROL

A. Independent Architectural Hardware Consultant: Engage a qualified independent Architectural Hardware Consultant to perform inspections and to prepare inspection reports.

1. Independent Architectural Hardware Consultant will inspect door hardware and state in each report whether installed work complies with or deviates from requirements, including whether door hardware is properly installed and adjusted.

3.5 ADJUSTING

A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

1. Door Closers: Adjust sweep period to comply with accessibility requirements and requirements of authorities having jurisdiction.
2. Spring Hinges: Adjust to achieve positive latching when door is allowed to close freely from an open position of 70 degrees and so that closing time complies with accessibility requirements of authorities having jurisdiction.
3. Electric Strikes: Adjust horizontal and vertical alignment of keeper to properly engage lock bolt.

B. Occupancy Adjustment: Approximately three months after date of Substantial Completion, Installer's Architectural Hardware Consultant shall examine and readjust each item of door hardware, including adjusting operating forces, as necessary to ensure function of doors, door hardware, and electrified door hardware.

3.6 CLEANING AND PROTECTION

A. Clean adjacent surfaces soiled by door hardware installation.

B. Clean operating items as necessary to restore proper function and finish.

C. Provide final protection and maintain conditions that ensure that door hardware is without damage or deterioration at time of Substantial Completion.

3.7 MAINTENANCE SERVICE

A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions for Director’s Representative’s continued adjustment, maintenance, and removal and replacement of door hardware.

B. Maintenance Service: Beginning at Substantial Completion, maintenance service shall include 12 months' full maintenance by skilled employees of door hardware Installer. Include quarterly preventive maintenance, repair, or replacement of worn or defective components, lubrication,

cleaning, and adjusting as required for proper door and door hardware operation. Parts and supplies shall be manufacturer's authorized replacement parts and supplies.

3.8 DEMONSTRATION

A. Engage Installer to train Maintenance personnel to adjust, operate, and maintain door hardware.

3.9 DOOR HARDWARE SCHEDULE

A. Hardware Set 1: Each door to have the following:

1. Set 1 – corridors, locker room, break room

3	Hinge	FBB168 Security Screws-SS 4-1/2" x 4-1/2"	US26D	ST
1	Passage Lock	45H7T 15M SH Less Core VIB	626	BE
1	Core	1C	626	BE
1	Wall Stop	406 TORX	US32D	RO
1	Gasketing	700SA TORX-10x3/4"		NG

2. Set 2 – Janitors, storage,

3	Hinge	FBB168 NRP Security Screws-SS 4-1/2" x 4-1/2"	US26D	ST
1	Storeroom Lock	45H7R 15M SH Less Core	626	BE
1	Core	1C	626	BE
1	Closer, PA mount	MC 36 351 P10	EN	SA
1	Wall Stop	406 TORX	US32D	RO
1	Gasketing	700SA TORX-10x3/4"		NG

3. Set 3 – Office spaces

3	Hinge	FBB168 NRP Security Screws-SS 4-1/2" x 4-1/2"	US26D	ST
1	Office Lock	45H7R 15M SH Less Core	626	BE
1	Core	1C	626	BE
1	Closer, PA mount	MC 36 351 P10	EN	SA
1	Wall Stop	406 TORX	US32D	RO
1	Gasketing	700SA TORX-10x3/4"		NG

4. Set 4 - Bathrooms

3	Hinge	FBB168 Security Screws-SS 4-1/2" x 4-1/2"	US26D	ST

1	Privacy with-Vacant/Engaged Lock	Vizilok SKU: C3FK	626	BE
1	Core	1C	626	BE
1	Closer, RA mount	MC 36 351 UO	EN	SA
1	Wall Stop	406 TORX	US32D	RO
1	Gasketing	700SA TORX-10x3/4"		NG

5. Set 5- Exit doors

3	Hinge	FBB168 Security Screws-SS 4-1/2" x 4-1/2"	US26D	ST
1	Mortise Lock (exit) with storeroom func-tion	40H Series Heavy Duty Mortise Locks by BEST	626	BE
1	Core	1C	626	BE
1	Conc Overhead Stop	1023SA SEC	US32D	AH
1	Closer, PA mount	MC 36 351 P10	EN	SA
1	Gasketing	700SA TORX-10x3/4"		NG
1	Sweep	C627A TORX-10x3/4"		NG
1	Threshold	8425 TORX-1/4-20 SSMS/EA SIA		NG
1	Door Stop Limiter	Model 10-326 Rixson		
1	Weatherstripping			

6. Set 6 – closet door

3	Hinge on each leaf	FBB168 Security Screws-SS 4-1/2" x 4-1/2"	US26D	ST
1	Upper track	HD Bifold Track and Hardware Set		

END OF SECTION 087100

SECTION 089119 - FIXED LOUVERS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Fixed extruded-aluminum louvers.

1.2 DEFINITIONS

A. Louver Terminology: Definitions of terms for metal louvers contained in AMCA 501 apply to this Section unless otherwise defined in this Section or in referenced standards.

B. Horizontal Louver: Louver with horizontal blades (i.e., the axis of the blades are horizontal).

C. Vertical Louver: Louver with vertical blades (i.e., the axis of the blades are vertical).

D. Drainable-Blade Louver: Louver with blades having gutters that collect water and drain it to channels in jambs and mullions, which carry it to bottom of unit and away from opening.

E. Wind-Driven-Rain-Resistant Louver: Louver that provides specified wind-driven-rain performance, as determined by testing in accordance with AMCA 500-L.

F. Windborne-Debris-Impact-Resistant Louver: Louver that provides specified windborne-debris-impact resistance, as determined by testing in accordance with AMCA 540.

1.3 SUBMITTALS

A. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Manufacturer’s installation instructions shall be provided along with product data.

C. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).

D. Product Data: For each type of product.

1. For louvers specified to bear AMCA seal, include printed catalog pages showing specified models with appropriate AMCA Certified Ratings Seals.
2. Include manufacturer’s installation instructions.

E. Shop Drawings: For louvers and accessories. Include plans, elevations, sections, details, and attachments to other work. Show frame profiles and blade profiles, angles, and spacing.

1. Show weep paths, gaskets, flashings, sealants, and other means of preventing water intrusion.
2. Show mullion profiles and locations.

F. Samples: For each type of metal finish required.

G. Delegated Design Submittal: For louvers indicated to comply with structural[**and seismic**] performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

H. Quality Control Submittals

1. Product Test Reports: Based on evaluation of comprehensive tests performed in accordance with AMCA 500-L by a qualified testing agency or by manufacturer and witnessed by a qualified testing agency, for each type of louver and showing compliance with performance requirements specified.
2. Windborne-debris-impact-resistance test reports.
3. Sample Warranties: For manufacturer's special warranties.

1.4 QUALITY ASSURANCE

A. Welding Qualifications: Qualify procedures and personnel in accordance with the following:

1. AWS D1.2, "Structural Welding Code - Aluminum."
2. AWS D1.3, "Structural Welding Code - Sheet Steel."
3. AWS D1.6, "Structural Welding Code - Stainless Steel."

1.5 FIELD CONDITIONS

A. Field Measurements: Verify actual dimensions of openings by field measurements before fabrication.

1.6 WARRANTY

A. Special Finish Warranty, Factory-Applied Finishes: Standard form in which manufacturer agrees to repair finishes or replace aluminum that shows evidence of deterioration of baked enamel, powder coat, or organic finishes within specified warranty period.

1. Deterioration includes, but is not limited to, the following:

a. Color fading more than 5 Delta E units when tested in accordance with ASTM D2244.
b. Chalking in excess of a No. 8 rating when tested in accordance with ASTM D4214.
c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.

2. Warranty Period: 10 years from date of Substantial Completion.

B. Special Finish Warranty, Anodized Finishes: Standard form in which manufacturer agrees to repair finishes or replace aluminum that shows evidence of deterioration of anodized finishes within specified warranty period.

1. Deterioration includes, but is not limited to, the following:

a. Color fading more than 5 Delta E units when tested in accordance with ASTM D2244.
b. Chalking in excess of a No. 8 rating when tested in accordance with ASTM D4214.
c. Cracking, peeling, or chipping.

2. Warranty Period: **10** years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Source Limitations: Obtain fixed louvers from single source from a single manufacturer where indicated to be of same type, design, or factory-applied color finish.

2.2 PERFORMANCE REQUIREMENTS

A. Delegated Design: Design louvers, including comprehensive engineering analysis by a qualified professional engineer, using structural[**and seismic**] performance requirements and design criteria indicated.

B. Structural Performance: Louvers withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated without permanent deformation of louver components, noise or metal fatigue caused by louver-blade rattle or flutter, or permanent damage to fasteners and anchors. Wind pressures are considered to act normal to the face of the building.

1. Wind Loads:

a. Determine loads based on pressures as indicated on Drawings.
b. Determine loads based on a uniform pressure of 30 lbf/sq. ft, acting inward or outward.

C. Windborne-Debris-Impact Resistance: Louvers located within 30 feet of grade pass enhanced protection, when tested in accordance with AMCA 540.

D. Seismic Performance:

1. As indicated on Drawings.

E. Louver Performance Ratings: Provide louvers complying with requirements specified, as demonstrated by testing manufacturer's stock units identical to those provided, except for length and width in accordance with AMCA 500-L.

F. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes.

1. Temperature Change (Range): 120 deg F, ambient; 180 deg F, material surfaces.

G. SMACNA Standard: Comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" for fabrication, construction details, and installation procedures.

2.3 FIXED EXTRUDED-ALUMINUM LOUVERS

A. Horizontal Nondrainable-Blade Louver, Extruded Aluminum:

1. Louver Depth: 4 inches.
2. Blade Profile: Blade with center baffle.
3. Frame and Blade Nominal Thickness: Not less than 0.080 inch.
4. Mullion Type: Semirecessed.
5. Louver Performance Ratings:

a. Free Area: Not less than 57.3% for 48-inch-wide by 48-inch-high louver.
b. Point of Beginning Water Penetration: Not less than 1123 fpm.
c. Air Performance: Not more than 0.10-inch wg static pressure drop at 700-fpmfree-area exhaust,intake velocity.

6. AMCA Seal: Mark units with AMCA Certified Ratings Seal.

2.4 MATERIALS

A. Galvanized-Steel Sheet: ASTM A653, **G90** zinc coating, mill phosphatized.

B. Fasteners: Use types and sizes to suit unit installation conditions.

1. Use Phillips flat-headscrews for exposed fasteners unless otherwise indicated.
2. For fastening aluminum, use aluminum or 300 series stainless steel fasteners.
3. For fastening galvanized steel, use hot-dip-galvanized-steel or 300 series stainless steel fasteners.
4. For fastening stainless steel, use 300 series stainless steel fasteners.
5. For color-finished louvers, use fasteners with heads that match color of louvers.

2.5 FABRICATION

A. Factory assemble louvers to minimize field splicing and assembly. Disassemble units as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation.

B. Maintain equal louver blade spacing **,** including separation between blades and frames at head and sill, to produce uniform appearance.

C. Fabricate frames, including integral sills, to fit in openings of sizes indicated, with allowances made for fabrication and installation tolerances, adjoining material tolerances, and perimeter sealant joints.

1. Frame Type: Exterior flange unless otherwise indicated.

D. Include supports, anchorages, and accessories required for complete assembly.

E. Provide subsills made of same material as louvers for recessed louvers.

F. Join frame members to each other and to fixed louver blades with fillet welds threaded fasteners, or both, as standard with louver manufacturer unless otherwise indicated or size of louver assembly makes bolted connections between frame members necessary.

2.6 LOUVER FINISHES

A. Finish louvers after assembly.

B. Color Anodic Finish: AAMA 611, AA-M12C22A42/A44, Class I, 0.018 mm or thicker.

1. Color: Dark bronze

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and openings, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

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

3.2 PREPARATION

A. Coordinate setting drawings, diagrams, templates, instructions, and directions for installation of anchorages that are to be embedded in concrete or masonry construction. Coordinate delivery of such items to Project site.

3.3 INSTALLATION

A. Locate and place louvers level, plumb, and at indicated alignment with adjacent work.

B. Use concealed anchorages where possible. Provide brass or lead washers fitted to screws where required to protect metal surfaces and to make a weathertight connection.

C. Form closely fitted joints with exposed connections accurately located and secured.

D. Provide perimeter reveals and openings of uniform width for sealants and joint fillers, as indicated.

E. Protect unpainted galvanized- and nonferrous-metal surfaces that are in contact with concrete, masonry, or dissimilar metals from corrosion and galvanic action by applying a heavy coating of bituminous paint or by separating surfaces with waterproof gaskets or nonmetallic flashing.

F. Install concealed gaskets, flashings, joint fillers, and insulation as louver installation progresses, where weathertight louver joints are required. Comply with Section 079200 "Joint Sealants" for sealants applied during louver installation.

3.4 ADJUSTING AND CLEANING

A. Clean exposed louver surfaces that are not protected by temporary covering, to remove fingerprints and soil during construction period. Do not let soil accumulate during construction period.

B. Before final inspection, clean exposed surfaces with water and a mild soap or detergent not harmful to finishes. Thoroughly rinse surfaces and dry.

C. Restore louvers damaged during installation and construction, so no evidence remains of corrective work. If results of restoration are unsuccessful, as determined by Director’s Representative, remove damaged units and replace with new units.

1. Touch up minor abrasions in finishes with air-dried coating that matches color and gloss of, and is compatible with, factory-applied finish coating.

END OF SECTION 089119

SECTION 092216 - NON-STRUCTURAL METAL FRAMING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Non-load-bearing steel framing systems for interior partitions.
2. Suspension systems for interior ceilings and soffits.
3. Grid suspension systems for gypsum board ceilings.

1.2 DEFINITIONS

A. Sheet Steel Gages: US Standard.

1.3 SUBMITTALS

A. General: Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Manufacturer's installation instructions shall be provided along with product data.

C. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).

D. Product Data: For each type of product.

E. Samples:

1. Steel Framing: 12 inches long, each type specified.
2. Fasteners: 10 each type specified.
3. Clips and other accessories: 1 each type specified.

F. Submit an Environmental Product Declaration (EPD) from the manufacturer for framing members and channels within this specification section, if available. A statement of the contractor's good faith effort to obtain the EPD shall be provided if not available.

1. Manufacturer-provided EPDs must be Product Specific Type III (Third-Party Reviewed), in adherence with ISO 14025 *Environmental labels and declarations*, ISO 14044 *Environmental management – Life cycle assessment*, and ISO 21930 *Core rules for environmental product declarations of construction products and services.*

G. Product Certificates: For each type of code-compliance certification for studs and tracks.

H. Evaluation Reports: For embossed, high-strength steel studs and trackspost-installed anchors, from ICC-ES or other qualified testing agency acceptable to authorities having jurisdiction.

1.4 QUALITY ASSURANCE

A. Code-Compliance Certification of Studs and Tracks: Provide documentation that framing members are certified according to the product-certification program of the Certified Steel Stud Association, the Steel Framing Industry Association, or the Steel Stud Manufacturers Association.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Fire-Test-Response Characteristics: For fire-resistance-rated assemblies that incorporate non-load-bearing steel framing, provide materials and construction identical to those tested in assembly indicated, according to ASTM E119 by an independent testing agency.

B. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated on Drawings, according to ASTM E90 and classified according to ASTM E413 by an independent testing agency.

C. Suspension System Design Requirements:

1. The furring system shall support the weight of the ceiling system (including finish) plus the weight of the lighting system. Additional intermediate supports (struts) and hangers shall be included as required to support the required weights.

    a. The actual fixture weights and locations will be furnished by the Electric Work Contractor (thru the Director's Representative).

2.2 FRAMING SYSTEMS

A. Framing Members, General: Comply with ASTM C754 for conditions indicated.

1. Steel Sheet Components: Comply with ASTM C645 requirements for steel unless otherwise indicated.
2. Protective Coating: ASTM A653, G60, hot-dip galvanized unless otherwise indicated.

B. Studs and Tracks: ASTM C645. Use either conventional steel studs and tracks or embossed, high-strength steel studs and tracks.

1. Steel Studs and Tracks:

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

1) ClarkDietrich.
2) MarinoWARE.
3) Telling Industries.
4) Approved equivalent.

b. Minimum Base-Steel Thickness: 0.0179 inch (25 ga) .
c. Depth: As indicated on Drawings.

2. Embossed, High Strength Steel Studs and Tracks: Roll-formed and embossed with surface deformations to stiffen the framing members so that they are structurally comparable to conventional ASTM C645 steel studs and tracks.

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

1) ClarkDietrich.
2) MarinoWARE.
3) Telling Industries.
4) Approved equivalent.

b. Minimum Base-Steel Thickness: As indicated on Drawings
c. Depth: As indicated on Drawings.

C. Slip-Type Head Joints: Where indicated, provide one of the following:

1. Clip System: Clips designed for use in head-of-wall deflection conditions that provide a positive attachment of studs to tracks while allowing 1-1/2-inch minimum vertical movement.

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

1) ClarkDietrich; Fast Top Clip.
2) MarinoWARE; Deflex-Clip.
3) Telling Industries; Verticlip.
4) Approved equivalent.

2. Single Long-Leg Track System: ASTM C645 top track with 2-inch- deep flanges in thickness not less than indicated for studs, installed with studs friction fit into top track and with continuous bridging located within 12 inches of the top of studs to provide lateral bracing.
3. Double-Track System: ASTM C645 top outer tracks, inside track with 2-inch- deep flanges in thickness not less than indicated for studs and fastened to studs, and outer track sized to friction-fit over inner track.
4. Deflection Track: Steel sheet top track manufactured to prevent cracking of finishes applied to interior partition framing resulting from deflection of structure above; in thickness not less than indicated for studs and in width to accommodate depth of studs.

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

1) ClarkDietrich; MaxTrak Slotted Deflection Track.
2) MarinoWARE; Slotted Track.
3) Telling Industries; True-Action Slotted Track.
4) Approved equivalent.

D. Flat Strap and Backing Plate: Steel sheet for blocking and bracing in length and width indicated.

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. ClarkDietrich.
b. MarinoWARE.
c. Telling Industries.
d. Approved equivalent.

2. Minimum Base-Steel Thickness: 0.0179 inch (25 ga) .

E. Cold-Rolled Channel Bridging: Steel, 0.0538-inch (16 ga) minimum base-steel thickness, with minimum 1/2-inch- wide flanges.

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. ClarkDietrich.
b. MarinoWARE.
c. Telling Industries.
d. Approved equivalent.

2. Depth: 1-1/2 inches.
3. Clip Angle: Not less than 1-1/2 by 1-1/2 inches, 0.068-inch (14 ga) - thick, galvanized steel.
4.

F. Cold-Rolled Furring Channels: 0.053-inch (16 ga) uncoated-steel thickness, with minimum 1/2-inch- wide flanges.

1. Depth: 3/4 inch.
2. Furring Brackets: Adjustable, corrugated-edge-type steel sheet with minimum uncoated-steel thickness of 0.0329 inch (20 ga).
3. Tie Wire: ASTM A641, Class 1 zinc coating, soft temper, 0.062-inch- diameter wire, or double strand of 0.048-inch- diameter wire.

2.3 SUSPENSION SYSTEMS

A. Tie Wire: ASTM A641, Class 1 zinc coating, soft temper, 0.062-inch- diameter wire, or double strand of 0.048-inch- diameter wire.

B. Hanger Attachments to Concrete:

1. Post-Installed Anchors: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC193 as appropriate for the substrate.

    a. Uses: Securing hangers to structure.
    b. Type: Torque-controlled, expansion anchor, torque-controlled, adhesive anchor, or adhesive anchor.
    c. Material for Interior Locations: Carbon-steel components zinc-plated to comply with ASTM B633 or ASTM F1941, Class Fe/Zn 5, unless otherwise indicated.
    d. Material for Exterior or Interior Locations and Where Stainless Steel Is Indicated: Alloy Group 1 stainless-steel bolts, ASTM F593, and nuts, ASTM F594.

2. Power-Actuated Anchors: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC70.

C. Wire Hangers: ASTM A641, Class 1 zinc coating, soft temper, 0.16 inch in diameter.

D. Flat Hangers: Steel sheet, 1 by 3/16 inch by length indicated.

E. Carrying Channels (Main Runners): Cold-rolled, commercial-steel sheet with a base-steel thickness of 0.0538 inch (16 ga) and minimum 1/2-inch- wide flanges.

1. Depth: 2-1/2 inches.

F. Furring Channels (Furring Members):

1. Cold-Rolled Channels: 0.0538-inch (16 ga) uncoated-steel thickness, with minimum 1/2-inch- wide flanges, 3/4 inch deep.
2. Steel Studs and Tracks: ASTM C645.

    a. Minimum Base-Steel Thickness: 0.0179 inch.
    b. Depth: As indicated on Drawings.

2.4 AUXILIARY MATERIALS

A. General: Provide auxiliary materials that comply with referenced installation standards.

1. Fasteners for Steel Framing: Of type, material, size, corrosion resistance, holding power, and other properties required to fasten steel members to substrates.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and substrates, with Installer present, and including welded hollow-metal frames, cast-in anchors, and structural framing, for compliance with requirements and other conditions affecting performance of the Work.

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

3.2 PREPARATION

A. Suspended Assemblies: Coordinate installation of suspension systems with installation of overhead structure to ensure that inserts and other provisions for anchorages to building structure have been installed to receive hangers at spacing required to support the Work and that hangers will develop their full strength.

1. Furnish concrete inserts and other devices indicated to other trades for installation in advance of time needed for coordination and construction.

B. Coordination with Sprayed Fire-Resistive Materials:

1. Before sprayed fire-resistive materials are applied, attach offset anchor plates or ceiling tracks to surfaces indicated to receive sprayed fire-resistive materials. Where offset anchor plates are required, provide continuous plates fastened to building structure not more than 24 inches o.c.
2. After sprayed fire-resistive materials are applied, remove them only to extent necessary for installation of non-load-bearing steel framing. Do not reduce thickness of fire-resistive materials below that are required for fire-resistance ratings indicated. Protect adjacent fire-resistive materials from damage.

3.3 INSTALLATION, GENERAL

A. Installation Standard: ASTM C754.

1. Gypsum Plaster Assemblies: Also comply with requirements in ASTM C841 that apply to framing installation.
2. Portland Cement Plaster Assemblies: Also comply with requirements in ASTM C1063 that apply to framing installation.
3. Gypsum Veneer Plaster Assemblies: Also comply with requirements in ASTM C844 that apply to framing installation.
4. Gypsum Board Assemblies: Also comply with requirements in ASTM C840 that apply to framing installation.

B. Install framing and accessories plumb, square, and true to line, with connections securely fastened.

C. Install supplementary framing, and blocking to support fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, or similar construction.

D. Install bracing at terminations in assemblies.

E. Do not bridge building control and expansion joints with non-load-bearing steel framing members. Frame both sides of joints independently.

3.4 INSTALLING FRAMED ASSEMBLIES

A. Install framing system components according to spacings indicated, but not greater than spacings required by referenced installation standards for assembly types.

B. Where studs are installed directly against exterior masonry walls or dissimilar metals at exterior walls, install isolation strip between studs and exterior wall.

C. Install studs so flanges within framing system point in same direction.

D. Install tracks at floors and overhead supports. Extend framing full height to structural supports or substrates above suspended ceilings except where partitions are indicated to terminate at suspended ceilings. Continue framing around ducts that penetrate partitions above ceiling.

1. Slip-Type Head Joints: Where framing extends to overhead structural supports, install to produce joints at tops of framing systems that prevent axial loading of finished assemblies.
2. Door Openings: Screw vertical studs at jambs to jamb anchor clips on door frames; install track section (for cripple studs) at head and secure to jamb studs.
    a. Where solid core wood doors, double doors, or doors weighing more than 50 lb are scheduled, install two studs at each jamb and one additional stud not more than 6 inches from jamb studs.
    b. Install cripple studs at head adjacent to each jamb stud, with a minimum 1/2-inch clearance from jamb stud to allow for installation of control joint in finished assembly.
    c. Extend jamb studs through suspended ceilings and attach to underside of overhead structure.
3. Other Framed Openings: Frame openings other than door openings the same as required for door openings unless otherwise indicated. Install framing below sills of openings to match framing required above door heads.
4. Fire-Resistance-Rated Partitions: Install framing to comply with fire-resistance-rated assembly indicated and support closures and to make partitions continuous from floor to underside of solid structure.
5. Secure tracks as recommended by the framing manufacturer for the floor and ceiling construction involved, except do not exceed 24 inches oc spacing for powder-driven fasteners, or 16 inches oc for other types of attachment. Provide fasteners approximately 2 inches from corners and ends of tracks.
6. Space studs 16 inches on center, unless otherwise indicated on the Drawings.
7. Use full length studs between tracks wherever possible. If necessary, splice studs with a minimum 8 inch nested lap and fasten with two screws per stud flange.

8. Install additional studs to support inside corners at partition intersections and corners, and to support outside corners, terminations of partitions, and both sides of control joints (if any).
9. Brace chase wall framing horizontally to opposite studs with 12 inch wide gypsum board gussets or metal framing braces, spaced vertically not more than 4 feet on center.

    a. Attach gypsum board gussets with a minimum 3 screws per stud flange.
    b. Attach metal framing braces with a minimum 2 screws per stud flange.

10. Where wall mounted door bumpers are scheduled, provide horizontal reinforcement consisting of 2 pieces of framing installed back-to- back, flush with the face of adjacent stud flanges.
11. Sound-Rated Partitions: Install framing to comply with sound-rated assembly indicated.

E. Direct Furring:

1. Screw to wood framing.
2. Attach to concrete or masonry with stub nails, screws designed for masonry attachment, or powder-driven fasteners spaced 24 inches o.c.

F. Installation Tolerance: Install each framing member so fastening surfaces vary not more than 1/8 inch from the plane formed by faces of adjacent framing.

3.5 INSTALLING CEILING SUSPENSION SYSTEMS

A. Install suspension system components according to spacings indicated, but not greater than spacings required by referenced installation standards for assembly types.

1. Hangers: 48 inches o.c.
2. Carrying Channels (Main Runners): 48 inches o.c.
3. Furring Channels (Furring Members): 16 inches o.c.

B. Isolate suspension systems from building structure where they abut or are penetrated by building structure to prevent transfer of loading imposed by structural movement.

C. Suspend hangers from building structure as follows:

1. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structural or suspension system.

    a. Splay hangers only where required to miss obstructions and offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.

2. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with locations of hangers required to support standard suspension system members, install supplemental suspension members and hangers in the form of trapezes or equivalent devices.

    a. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced installation standards.

3. Wire Hangers: Secure by looping and wire tying, either directly to structures or to inserts, eye screws, or other devices and fasteners that are secure and appropriate for substrate, and in a manner that will not cause hangers to deteriorate or otherwise fail.
4. Flat Hangers: Secure to structure, including intermediate framing members, by attaching to inserts, eye screws, or other devices and fasteners that are secure and appropriate for structure and hanger, and in a manner that will not cause hangers to deteriorate or otherwise fail.
5. Do not attach hangers to steel roof deck.
6. Do not attach hangers to permanent metal forms. Furnish cast-in-place hanger inserts that extend through forms.
7. Do not attach hangers to rolled-in hanger tabs of composite steel floor deck.
8. Do not connect or suspend steel framing from ducts, pipes, or conduit.

D. Fire-Resistance-Rated Assemblies: Wire tie furring channels to supports.

E. Seismic Bracing: Sway-brace suspension systems with hangers used for support.

F. Grid Suspension Systems: Attach perimeter wall track or angle where grid suspension systems meet vertical surfaces. Mechanically join main beam and cross-furring members to each other and butt-cut to fit into wall track.

G. Installation Tolerances: Install suspension systems that are level to within 1/8 inch in 12 feet measured lengthwise on each member that will receive finishes and transversely between parallel members that will receive finishes.

END OF SECTION 092216

SECTION 092900 - GYPSUM BOARD

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. Interior gypsum board for walls soffits
2. .
3. Tile backing panels.

B. Related Requirements:
1. Section 092216 "Non-Structural Metal Framing" for non-structural steel framing and suspension systems that support gypsum board panels.
2. Section 093013 "Ceramic Tiling" for cementitious backer units installed as substrates for ceramic tile.

1.3 SUBMITTALS

A. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Manufacturer’s installation instructions shall be provided along with product data.

C. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).

D. Product Data: Catalog sheets, specifications and installation instructions for each item specified:

1. Gypsum wallboard.
2. Gypsum board, Type X.
3. Water-resistant gypsum backing board.
4. Interior trim.
5. Sound-attenuation blankets.
6. Acoustical sealant.

E. Sustainable Design Submittals:

F. Samples: For the following products:

1. Trim Accessories: Full-size Sample in 12-inch long length for each trim accessory indicated.
2. .
3. Fasteners: 10 each for type specified.

G. Samples for Initial Selection: For each type of trim accessory indicated.

H. Samples for Verification: For the following products:

1. Trim Accessories: Full-size Sample in 12-inch long length for each trim accessory indicated.

1.4 DELIVERY, STORAGE AND HANDLING

A. Store materials inside under cover and keep them dry and protected against weather, condensation, direct sunlight, construction traffic, and other potential causes of damage. Stack panels flat and supported on risers on a flat platform to prevent sagging.

1.5 FIELD CONDITIONS

A. Environmental Limitations: Comply with ASTM C840 requirements or gypsum board manufacturer's written instructions, whichever are more stringent.

B. Do not install paper-faced gypsum panels until installation areas are enclosed and conditioned.

C. Do not install panels that are wet, moisture damaged, and mold damaged.

1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

D. Comply with gypsum board manufacturer’s printed temperature and ventilation requirements during application and finishing. Ventilate installation areas to relieve excess moisture.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Fire-Resistance-Rated Assemblies: For fire-resistance-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E119 by an independent testing agency.

B. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E90 and classified according to ASTM E413 by an independent testing agency.

2.2 GYPSUM BOARD, GENERAL

A. Size: Provide maximum lengths and widths available that will minimize joints in each area and that correspond with support system indicated.

2.3 INTERIOR GYPSUM BOARD

A. Gypsum Wallboard: ASTM C1396.

1. Thickness: 1/2 inch.
2. Long Edges: Tapered.

B. Gypsum Board, Type X: ASTM C1396.

1. Thickness: 5/8 inch.
2. Long Edges: Tapered.

2.4 SPECIALTY GYPSUM BOARD

2.5 TILE BACKING PANELS

A. Water-Resistant Gypsum Backing Board: ASTM C1396, with manufacturer's standard edges.

1. Core: 5/8 inch, Type X

2.6 TRIM ACCESSORIES

A. Interior Trim: ASTM C1047.

1. Material: Galvanized or aluminum-coated steel sheet or rolled zinc.
2. Shapes:

a. Cornerbead.
b. Bullnose bead.
c. LC-Bead: J-shaped; exposed long flange receives joint compound.
d. L-Bead: L-shaped; exposed long flange receives joint compound.
e. U-Bead: J-shaped; exposed short flange does not receive joint compound.
f. Expansion (control) joint.
g. Curved-Edge Cornerbead: With notched or flexible flanges.
h. Base-of-Wall Galvanized Moisture Barrier Trim: Galvanized-steel sheet, 2 inches high.
i. Base-of-Wall PVC Moisture Barrier Trim: Extruded PVC, 3-1/2 inch high.

2.7 JOINT TREATMENT MATERIALS

A. General: Comply with ASTM C475.

B. Joint Tape:

1. Interior Gypsum Board: Paper.
2. Exterior Gypsum Soffit Board: Paper.
3. Glass-Mat Gypsum Sheathing Board: 10-by-10 glass mesh.
4. Tile Backing Panels: As recommended by panel manufacturer.

C. Joint Compound for Interior Gypsum Board: For each coat, use formulation that is compatible with other compounds applied on previous or for successive coats.

1. Prefilling: At open joints**,** rounded or beveled panel edges, and damaged surface areas, use setting-type taping compound.
2. Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use setting-type taping compound.

    a. Use setting-type compound for installing paper-faced metal trim accessories.

3. Fill Coat: For second coat, use setting-type, sandable topping compound.
4. Finish Coat: For third coat, use setting-type, sandable topping compound.
5. Skim Coat: For final coat of Level 5 finish, use setting-type, sandable topping compound] [drying-type, all-purpose compound

D. Joint Compound for Tile Backing Panels:
1. Water-Resistant Gypsum Backing Board: Use setting-type taping compound and setting-type, sandable topping compound.

2.8 AUXILIARY MATERIALS

A. Provide auxiliary materials that comply with referenced installation standards and manufacturer's written instructions.

B. Laminating Adhesive: Adhesive or joint compound recommended for directly adhering gypsum panels to continuous substrate.

C. Steel Drill Screws: ASTM C1002 unless otherwise indicated.

1. Use screws complying with ASTM C954 for fastening panels to steel members from 0.033 to 0.112 inch thick.
2. For fastening cementitious backer units, use screws of type and size recommended by panel manufacturer.

D. Sound-Attenuation Blankets: ASTM C665, Type I (blankets without membrane facing) produced by combining thermosetting resins with mineral fibers manufactured from glass, slag wool, or rock wool.

1. Fire-Resistance-Rated Assemblies: Comply with mineral-fiber requirements of assembly.

E. Vapor Retarder: As specified in Section 072600 "Vapor Retarders."

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and substrates including welded hollow-metal frames and support framing, with Installer present, for compliance with requirements and other conditions affecting performance of the Work.

B. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.

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

3.2 INSTALLATION AND FINISHING OF PANELS, GENERAL

A. Comply with ASTM C840.

B. Install ceiling panels across framing to minimize the number of abutting end joints and to avoid abutting end joints in central area of each ceiling. Stagger abutting end joints of adjacent panels not less than one framing member.

C. Install panels with face side out. Butt panels together for a light contact at edges and ends with not more than 1/16 inch of open space between panels. Do not force into place.

D. Locate edge and end joints over supports, except in ceiling applications where intermediate supports or gypsum board back-blocking is provided behind end joints. Do not place tapered edges against cut edges or ends. Stagger vertical joints on opposite sides of partitions. Do not make joints other than control joints at corners of framed openings.

E. Form control and expansion joints with space between edges of adjoining gypsum panels.

F. Cover both faces of support framing with gypsum panels in concealed spaces (above ceilings, etc.), except in chases braced internally.

1. Unless concealed application is indicated or required for sound, fire, air, or smoke ratings, coverage may be accomplished with scraps of not less than 8 sq. ft. in area.
2. Fit gypsum panels around ducts, pipes, and conduits.
3. Where partitions intersect structural members projecting below underside of floor/roof slabs and decks, cut gypsum panels to fit profile formed by structural members; allow 1/4- to 3/8-inch wide joints to install sealant.

G. Isolate perimeter of gypsum board applied to non-load-bearing partitions at structural abutments. Provide 1/4- to 1/2-inch wide spaces at these locations and trim edges with edge trim where edges of panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.

H. Attachment to Steel Framing: Attach panels so leading edge or end of each panel is attached to open (unsupported) edges of stud flanges first.

I. Wood Framing: Install gypsum panels over wood framing, with floating internal corner construction. Do not attach gypsum panels across the flat grain of wide-dimension lumber, including floor joists and headers. Float gypsum panels over these members or provide control joints to counteract wood shrinkage.

J. STC-Rated Assemblies: Seal construction at perimeters, behind control joints, and at openings and penetrations with a continuous bead of acoustical sealant. Install acoustical sealant at both faces of partitions at perimeters and through penetrations. Comply with ASTM C919 and with manufacturer's written instructions for locating edge trim and closing off sound-flanking paths around or through assemblies, including sealing partitions above acoustical ceilings.

K. Install sound attenuation blankets before installing gypsum panels unless blankets are readily installed after panels have been installed on one side.

3.3 INSTALLATION OF INTERIOR GYPSUM BOARD

A. Install interior gypsum board in the following locations:

1. Wallboard Type: Vertical surfaces unless otherwise indicated.

B. Single-Layer Application:

1. On ceilings, apply gypsum panels before wall/partition board application to greatest extent possible and at right angles to framing unless otherwise indicated.
2. On partitions/walls, apply gypsum panels vertically (parallel to framing)unless otherwise indicated or required by fire-resistance-rated assembly, and minimize end joints.

    a. Stagger abutting end joints not less than one framing member in alternate courses of panels.
    b. At stairwells and other high walls, install panels horizontally unless otherwise indicated or required by fire-resistance-rated assembly.

3. On Z-shaped furring members, apply gypsum panels vertically (parallel to framing) with no end joints. Locate edge joints over furring members.
4. Fastening Methods: Apply gypsum panels to supports with steel drill screws.

3.4 INSTALLATION OF TILE BACKING PANELS

A. Water-Resistant Backing Board: Install where indicated with 1/4-inch gap where panels abut other construction or penetrations.

B. Where tile backing panels abut other types of panels in same plane, shim surfaces to produce a uniform plane across panel surfaces.

3.5 INSTALLATION OF TRIM ACCESSORIES

A. General: For trim with back flanges intended for fasteners, attach to framing with same fasteners used for panels. Otherwise, attach trim according to manufacturer's written instructions.

B. Control Joints: Install control joints according to ASTM C840 and in specific locations approved by Director’s Representative for visual effect.

C. Interior Trim: Install in the following locations:

1. Cornerbead: Use at outside corners.

3.6 FINISHING GYPSUM BOARD

A. General: Treat gypsum board joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration. Promptly remove residual joint compound from adjacent surfaces.

B. Prefill open joints, rounded or beveled edges**,** and damaged surface areas.

C. Apply joint tape over gypsum board joints, except for trim products specifically indicated as not intended to receive tape.

D. Gypsum Board Finish Levels: Finish panels to levels indicated below and according to ASTM C840:

1. Level 1: Ceiling plenum areas, concealed areas, and where indicated.
2. Level 2: Panels that are substrate for tile.

3. Level 5: At all exposed areas**.**

a. Primer and its application to surfaces are specified in Section 099123 "Interior Painting."

E. Cementitious Backer Units: Finish according to manufacturer's written instructions.

3.7 PROTECTION

A. Protect adjacent surfaces from drywall compound and promptly remove from floors and other non-drywall surfaces. Repair surfaces stained, marred, or otherwise damaged during drywall application.

B. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.

C. Remove and replace panels that are wet, moisture damaged, and mold damaged.

1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.

2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION 092900

SECTION 093013 - CERAMIC TILING

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. .
   2. Porcelain tile.
   3. Crack isolation membrane.
   4. Metal edge strips.

B. Related Requirements:
   1. Section 079200 "Joint Sealants" for sealing of expansion, contraction, control, and isolation joints in tile surfaces.

1.3 DEFINITIONS

A. General: Definitions in the ANSI A108 series of tile installation standards and in ANSI A137.1 apply to Work of this Section unless otherwise specified.

B. ANSI A108 Series: ANSI A108.01, ANSI A108.02, ANSI A108.1A, ANSI A108.1B, ANSI A108.1C, ANSI A108.4, ANSI A108.5, ANSI A108.6, ANSI A108.9, ANSI A108.10, ANSI A108.11, ANSI A108.13, ANSI A108.14, ANSI A108.15, ANSI A108.16, and ANSI A108.17, which are contained in its "Specifications for Installation of Ceramic Tile."

C. Face Size: Actual tile size, excluding spacer lugs.

D. Module Size: Actual tile size plus joint width indicated.

1.4 PREINSTALLATION MEETINGS

1. Review requirements in ANSI A108.01 for substrates and for preparation by other trades.
2. Required Attendees:

   a. Construction Contractor.
   b. Tiling Subcontractor.
   c. Representative for the Designer of Record.
   d. Director’s Representative.

1.5 SUBMITTALS

A. General: Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Manufacturer's installation instructions shall be provided along with product data.

C. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).

D. Product Data: For each type of product.

E. Sustainable Design Submittals:

F. Shop Drawings: Show locations of each type of tile and tile pattern. Show widths, details, and locations of expansion, contraction, control, and isolation joints in tile substrates and finished tile surfaces.

G. Samples for Initial Selection: For tile, grout, and accessories involving color selection.

H. Samples for Verification:

1. Full-size units of each type and composition of tile and for each color and finish required
2. .
3. Full-size units of each type of trim and accessory for each color and finish required.
4. Metal edge strips in 6-inch lengths.

I. Qualification Data: For Installer.

1. Name of each person who will be performing the work, trade certificates, and their employer's name, business address, and telephone number.
2. Names and addresses of 3 similar projects that each person has worked on during the past 5 years.

J. Master Grade Certificates: For each shipment, type, and composition of tile, signed by tile manufacturer and Installer.

K. Product Certificates: For each type of product.

L. Product Test Reports: For tile-setting and -grouting products and certified porcelain tile.

M. Field Quality Control Reports: Results of moisture testing for slabs on grade.

1.6 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match and are from same production runs as products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Tile and Trim Units: Furnish quantity of full-size units equal to 3 percent of amount installed for each type, composition, color, pattern, and size indicated.
2. Grout: Furnish quantity of grout equal to 3 percent of amount installed for each type, composition, and color indicated.

1.7 QUALITY ASSURANCE

A. Installer Qualifications:

1. Installer employs only Ceramic Tile Education Foundation Certified Installers or installers recognized by the U.S. Department of Labor as Journeyman Tile Layers for Project.
2. Installer employs at least one installer for Project that has completed the Advanced Certification for Tile Installers (ACT) certification for installation of gauged porcelain tile/and large format tile.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Deliver and store packaged materials in original containers with seals unbroken and labels intact until time of use. Comply with requirements in ANSI A137.1 for labeling tile packages.

B. Store tile and cementitious materials on elevated platforms, under cover, and in a dry location.

C. Store aggregates where grading and other required characteristics can be maintained and contamination can be avoided.

D. Store liquid materials in unopened containers and protected from freezing.

1.9 FIELD CONDITIONS

A. Environmental Limitations: Do not install tile until construction in spaces is complete and ambient temperature and humidity conditions are maintained at the levels indicated in referenced standards and manufacturer's written instructions.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Source Limitations for Tile: Obtain tile of each type and color or finish from single source or producer.

1. Obtain tile of each type and color or finish from same production run and of consistent quality in appearance and physical properties for each contiguous area.

B. Source Limitations for Setting and Grouting Materials: Obtain ingredients of a uniform quality for each mortar, adhesive, and grout component from single manufacturer and each aggregate from single source or producer.

1. Obtain setting and grouting materials, except for unmodified Portland cement and aggregate, from single manufacturer.
2. Obtain waterproof membrane and crack isolation membrane, except for sheet products, from manufacturer of setting and grouting materials.

C. Source Limitations for Other Products: Obtain each of the following products specified in this Section from a single manufacturer:
1. Crack isolation membrane.
2. Cementitious backer units.
3. Metal edge strips.

2.2 PRODUCTS, GENERAL

A. ANSI Ceramic Tile Standard: Provide tile that complies with ANSI A137.1 for types, compositions, and other characteristics indicated.

B. ANSI Standards for Tile Installation Materials: Provide materials complying with ANSI A108.02, ANSI standards referenced in other Part 2 articles, ANSI standards referenced by TCNA installation methods specified in tile installation schedules, and other requirements specified.

C. Factory Blending: For tile exhibiting color variations within ranges, blend tile in factory and package so tile units taken from one package show same range in colors as those taken from other packages and match approved Samples.

D. Mounting: For factory-mounted tile, provide back- or edge-mounted tile assemblies as standard with manufacturer unless otherwise indicated.

1. Where tile is indicated for installation [**in swimming pools**] [**on exteriors**] [**or**] [**in wet areas**], do not use back- or edge-mounted tile assemblies unless tile manufacturer specifies in writing that this type of mounting is suitable for installation indicated and has a record of successful in-service performance.

2.3 TILE PRODUCTS

A. Porcelain Floor tile:.

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. Basis of Design - Crossville

b. American Marazzi Tile, Inc.
c. American Olean; a division of Dal-Tile Corporation.
d. Daltile.
e. Approved equivalent.

2. Certification: Tile certified by the Porcelain Tile Certification Agency.

3. .
4. Thickness: 1/4 inch.
5. Face: Polished with square edges
6. Dynamic Coefficient of Friction: Not less than 0.42.
7. Tile Color, Glaze, and Pattern: As selected by Director's Representative from manufacturer's full range.
8. Grout Color: As selected by Director's Representative from manufacturer's full range.
9. Trim Units: Coordinated with sizes and coursing of adjoining flat tile where applicable and matching characteristics of adjoining flat tile. Provide shapes as follows, selected from manufacturer's standard shapes:

    a. Base Cap: Surface bullnose, module size same as adjoining flat tile.
    b. Wainscot Cap: Surface bullnose, module size same as adjoining flat tile.
    c. Wainscot Cap for Flush Conditions: Regular flat tile for conditions where tile wainscot is shown flush with wall surface above it, same size as adjoining flat tile.
    d. External Corners: Surface bullnose, module size same as adjoining flat tile.
    e. Internal Corners: Field-butted square corners.
    f. Tapered Transition Tile: Shape designed to effect transition between thickness of tile floor and adjoining floor finishes of different thickness, tapered to provide reduction in thickness from 1/2 to 1/4 inch across nominal 4-inch dimension.

    g.

2.4 TILE BACKING PANELS

A. Cementitious Backer Units: ANSI A118.9 or ASTM C1325, Type A, in maximum lengths available to minimize end-to-end butt joints.

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. Custom Building Products; WonderBoard® Lite Backerboard.
    b. Georgia-Pacific Gypsum LLC; DensShield® Tile Backer.
    c. USG Corporation; DUROCK Cement Board.
    d. Approved equivalent.

2. Thickness: 5/8 inch.

2.5 CRACK ISOLATION MEMBRANE

A. General: Manufacturer's standard product, selected from the following, that complies with ANSI A118.12 for high performance and is recommended by the manufacturer for the application indicated. Include reinforcement and accessories recommended by manufacturer.

B. Fluid-Applied Membrane: Liquid-latex rubber or elastomeric polymer.

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. Custom Building Products; RedGard® Waterproofing and Crack Prevention Membrane.
b. Laticrete International, Inc.; Laticrete Fracture Ban SC.
c. MAPEI Corporation; Mapeleastic CI.
d. Approved equivalent.

2.6 SETTING MATERIALS

A. Improved Modified Dry-Set Mortar (Thinset): ANSI A118.15.

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. Custom Building Products; FlexBond® Premium Crack Prevention Thin-set Mortar.
b. Laticrete International, Inc.; Laticrete 254 Platinum.
c. MAPEI Corporation; Ultraflex 3.
d. Approved equivalent.

2. Provide prepackaged, dry-mortar mix containing dry, redispersible, vinyl acetate or acrylic additive to which only water must be added at Project site.
3. For wall applications, provide mortar that complies with requirements for nonsagging mortar in addition to the other requirements in ANSI A118.15.

2.7 GROUT MATERIALS

A. High-Performance Tile Grout: ANSI A118.7.

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. Custom Building Products; Prism® Ultimate Performance Grout.
b. Laticrete International, Inc.; Laticrete Permacolor® Grout.
c. MAPEI Corporation; Ultracolor® Plus FA.
d. Summitville Tiles, Inc.; S-730 ProMax Grout.
e. Approved equivalent.

2. Polymer Type: Ethylene vinyl acetate or acrylic additive, in dry, redispersible form, prepackaged with other dry ingredients.

B. Grout for Pregrouted Tile Sheets: Same product used in factory to pregrout tile sheets.

2.8 MISCELLANEOUS MATERIALS

A. Trowelable Underlayments and Patching Compounds: Latex-modified, portland cement-based formulation provided or approved by manufacturer of tile-setting materials for installations indicated.

B. Vapor-Retarder Membrane: Polyethylene sheeting, ASTM D4397, 4.0 mils thick.

C. Metal Edge Strips: Angle or L-shaped, height to match tile and setting-bed thickness, metallic or combination of metal and PVC or neoprene base, designed specifically for flooring applications; stainless steel, ASTM A276 or ASTM A666, 300 Series exposed-edge material.

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. Blanke Corporation; www.blankecorp.com.
b. Dural; us.dural.com.
c. Schluter Systems L.P.; www.schluter.com.
d. Approved equivalent.

D. Tile Cleaner: A neutral cleaner capable of removing soil and residue without harming tile and grout surfaces, specifically approved for materials and installations indicated by tile and grout manufacturers.

E. Floor Sealer: Manufacturer's standard product for sealing grout joints and that does not change color or appearance of grout.

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. ColorSealPro; www.colorsealpro.com.
b. Laticrete International, Inc.
c. Modern Stone Technologies; www.modernstonecare.com.
d. Approved equivalent.

2.9 MIXING MORTARS AND GROUT

A. Mix mortars and grouts to comply with referenced standards and mortar and grout manufacturers' written instructions.

B. Add materials, water, and additives in accurate proportions.

C. Obtain and use type of mixing equipment, mixer speeds, mixing containers, mixing time, and other procedures to produce mortars and grouts of uniform quality with optimum performance characteristics for installations indicated.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions where tile will be installed, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

1. Verify that substrates for setting tile are firm; dry; clean; free of coatings that are incompatible with tile-setting materials, including curing compounds and other substances that contain soap, wax, oil, or silicone; and comply with flatness tolerances required by ANSI A108.01 for installations indicated.
2. Verify that concrete substrates for tile floors installed with thinset mortar comply with surface finish requirements in ANSI A108.01 for installations indicated.

    a. Verify that surfaces that received a steel trowel finish have been mechanically scarified.
    b. Verify that protrusions, bumps, and ridges have been removed by sanding or grinding.

3. Verify that installation of grounds, anchors, recessed frames, electrical and mechanical units of work, and similar items located in or behind tile has been completed.
4. Verify that joints and cracks in tile substrates are coordinated with tile joint locations; if not coordinated, adjust joint locations in consultation with Director's Representative.

B. Moisture Testing of Concrete Slabs on Grade: Perform tests so that each test area does not exceed 1000 sq. ft., and perform no fewer than three tests in each installation area and with test areas evenly spaced in installation areas.

1. Relative Humidity Test: Using in-situ probes, ASTM F2170. Proceed with installation only after substrates have a maximum 75 percent relative humidity level measurement or a level acceptable to the setting bed manufacturer.

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

3.2 PREPARATION

A. Fill cracks, holes, and depressions in concrete substrates for tile floors installed with adhesives or thinset mortar with trowelable leveling and patching compound specifically recommended by tile-setting material manufacturer.

B. Where indicated, prepare substrates to receive waterproof membrane by applying a reinforced mortar bed that complies with ANSI A108.1A and is sloped 1/4 inch per foot toward drains.

C. Blending: For tile exhibiting color variations, verify that tile has been factory blended and packaged so tile units taken from one package show same range of colors as those taken from other packages and match approved Samples. If not factory blended, either return to manufacturer or blend tiles at Project site before installing.

3.3 INSTALLATION OF CERAMIC TILE

A. Comply with TCNA's "Handbook for Ceramic, Glass, and Stone Tile Installation" for TCNA installation methods specified in tile installation schedules. Comply with parts of the ANSI A108 series "Specifications for Installation of Ceramic Tile" that are referenced in TCNA installation methods, specified in tile installation schedules, and apply to types of setting and grouting materials used.

1. For the following installations, follow procedures in the ANSI A108 series of tile installation standards for providing 95 percent mortar coverage:

a. Exterior tile floors.
b. Tile floors in wet areas.
c. Tile swimming pool decks.
d. Tile floors in laundries.
e. Tile floors consisting of tiles 8 by 8 inches or larger.
f. Tile floors consisting of rib-backed tiles.

B. Extend tile work into recesses and under or behind equipment and fixtures to form complete covering without interruptions unless otherwise indicated. Terminate work neatly at obstructions, edges, and corners without disrupting pattern or joint alignments.

C. Accurately form intersections and returns. Perform cutting and drilling of tile without marring visible surfaces. Carefully grind cut edges of tile abutting trim, finish, or built-in items for straight aligned joints. Fit tile closely to electrical outlets, piping, fixtures, and other penetrations so plates, collars, or covers overlap tile.

D. Provide manufacturer's standard trim shapes where necessary to eliminate exposed tile edges.

E. Where accent tile differs in thickness from field tile, vary setting-bed thickness so that tiles are flush.

F. Jointing Pattern: Lay tile in grid pattern unless otherwise indicated. Lay out tile work and center tile fields in both directions in each space or on each wall area. Lay out tile work to minimize the use of pieces that are less than half of a tile. Provide uniform joint widths unless otherwise indicated.

1. For tile mounted in sheets, make joints between tile sheets same width as joints within tile sheets so joints between sheets are not apparent in finished work.
2. Where adjoining tiles on floor, base, walls, or trim are specified or indicated to be same size, align joints.
3. Where tiles are specified or indicated to be whole integer multiples of adjoining tiles on floor, base, walls, or trim, align joints unless otherwise indicated.

G. Joint Widths: Unless otherwise indicated, install tile with the following joint widths:
1. Porcelain Tile: 1/4 inch.

H. Lay out tile wainscots to dimensions indicated or to next full tile beyond dimensions indicated.

I. Expansion Joints: Provide expansion joints and other sealant-filled joints, including control, contraction, and isolation joints, where indicated. Form joints during installation of setting materials, mortar beds, and tile. Do not saw-cut joints after installing tiles.

1. Where joints occur in concrete substrates, locate joints in tile surfaces directly above them.

J. Metal Edge Strips: Install where exposed edge of tile flooring meets carpet, wood, or other flooring that finishes flush with top of tile.

K. Floor Sealer: Apply floor sealer to cementitious grout joints in tile floors according to floor-sealer manufacturer's written instructions. As soon as floor sealer has penetrated grout joints, remove excess sealer and sealer from tile faces by wiping with soft cloth.

3.4 INSTALLATION OF TILE BACKING PANEL

A. Install panels and treat joints according to ANSI A108.11 and manufacturer's written instructions for type of application indicated.

3.5 INSTALLATION OF WATERPROOF MEMBRANE

A. Install waterproof membrane to comply with ANSI A108.13 and manufacturer's written instructions to produce waterproof membrane of uniform thickness that is bonded securely to substrate.

B. Allow waterproof membrane to cure and verify by testing that it is watertight before installing tile or setting materials over it.

3.6 INSTALLATION OF CRACK ISOLATION MEMBRANE

A. Install crack isolation membrane to comply with ANSI A108.17 and manufacturer's written instructions to produce membrane of uniform thickness that is bonded securely to substrate.

B. Allow crack isolation membrane to cure before installing tile or setting materials over it.

3.7 ADJUSTING AND CLEANING

A. Remove and replace tile that is damaged or that does not match adjoining tile. Provide new matching units, installed as specified and in a manner to eliminate evidence of replacement.

B. Cleaning: On completion of placement and grouting, clean all ceramic tile surfaces so they are free of foreign matter.

1. Remove grout residue from tile as soon as possible.
2. Clean grout smears and haze from tile according to tile and grout manufacturer's written instructions but no sooner than 10 days after installation. Use only cleaners recommended by tile and grout manufacturers and only after determining that cleaners are safe to use by

testing on samples of tile and other surfaces to be cleaned. Protect metal surfaces and plumbing fixtures from effects of cleaning. Flush surfaces with clean water before and after cleaning.

3.8 PROTECTION

A. Protect installed tile work with kraft paper or other heavy covering during construction period to prevent staining, damage, and wear. If recommended by tile manufacturer, apply coat of neutral protective cleaner to completed tile walls and floors.

B. Prohibit foot and wheel traffic from tiled floors for at least seven days after grouting is completed.

C. Before final inspection, remove protective coverings and rinse neutral protective cleaner from tile surfaces.

END OF SECTION 093013

SECTION 095123 - ACOUSTICAL TILE CEILINGS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Acoustical tiles for interior ceilings.

B. Products furnished, but not installed under this Section, include anchors, clips, and other ceiling attachment devices to be cast in concrete.

1.2 REFERENCES

A. ASTM E 1264 - Standard Classification for Acoustical Ceiling Products.

B. Ceilings and Interior Systems Contractors Association (CISCA) Acoustical Ceilings: Use and Practice.

C. Ceilings and Interior Systems Contractors Association (CISCA) Acoustical Ceilings: Ceiling Systems Handbook.

D. UL - Fire Resistance Directory and Building Material Directory.

1.3 DEFINITIONS

A. Company Field Advisor: An employee of the Company which markets the primary components of the system under their name who is certified in writing by the Company to be technically qualified in the design and installation of the ceiling systems.

1.4 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.5 SUBMITTALS

A. General: Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Manufacturer’s installation instructions shall be provided along with product data.

C. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).

D. Submittals Package: Submit the Coordination Drawings, Product Data, Quality Control Submittals and Evaluation Reports specified below at the same time as a package.

E. Product Data: For each type of product including product testing data.

F. Sustainable Design Submittals:

G. Samples: For each exposed product and for each color and texture specified, 6 inches in size.

H. Samples for Initial Selection: For components with factory-applied finishes.

I. Samples for Verification: For each component indicated and for each exposed finish required, prepared on Samples of sizes indicated below:

1. Acoustical Tiles: Set of full-size Samples of each type, color, pattern, and texture.
2. Exposed Moldings and Trim: Set of 6-inch- long Samples of each type and color.
3. Seismic Clips: Full size.
4. Fasteners: Each type required.
5. Wire: 12 inches long piece.

J. Delegated-Design Submittal: For seismic restraints for ceiling systems.

1. Include design calculations for seismic restraints including analysis data signed and sealed by the qualified professional engineer, licensed in the State of New York, responsible for their preparation.

K. Coordination Drawings: Reflected ceiling plans, drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of the items involved:

1. Ceiling suspension-system members.
2. Structural members to which suspension systems will be attached.
3. Method of attaching hangers to building structure.

    a. Furnish layouts for cast-in-place anchors, clips, and other ceiling attachment devices whose installation is specified in other Sections.

4. Carrying channels or other supplemental support for hanger-wire attachment where conditions do not permit installation of hanger wires at required spacing.
5. Size and location of initial access modules for acoustical tile.
6. Items penetrating finished ceiling and ceiling-mounted items including the following:

    a. Lighting fixtures.
    b. Diffusers.
    c. Grilles.
    d. Speakers.
    e. Sprinklers.
    f. Access panels.
    g. Perimeter moldings.

7. Show operation of hinged and sliding components adjacent to acoustical tiles.
8. Minimum Drawing Scale: 1/8 inch = 1 foot.

L. Qualification Data: For testing agency.

M. Product Test Reports: For each acoustical tile ceiling, for tests performed by a qualified testing agency.

N. Quality Control Submittals:

1. Installer's Qualifications Data:

a. Name of each person who will be performing the Work and their employer's name, business address and telephone number.
b. Names and addresses of 3 similar projects that each person has worked on during the past 5 years.

2. Company Field Advisor Data:

a. Name, business address and telephone number of Company Field Advisor secured for the required services.
b. Certified statement from the Company listing qualifications of the Company Field Advisor.
c. Services and each product for which authorization is given by the Company, listed specifically for this project.

O. Evaluation Reports: For each acoustical tile ceiling suspension system and anchor and fastener type, from ICC-ES.

P. Field quality-control reports.

1.6 CLOSEOUT SUBMITTALS

A. Maintenance Data: For finishes to include in maintenance manuals.

1.7 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Acoustical Ceiling Units: Full-size tiles equal to 2 percent of quantity installed.
2. Suspension-System Components: Quantity of each concealed grid and exposed component equal to 2 percent of quantity installed.

1.8 QUALITY ASSURANCE

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

1. Build mockup of typical ceiling area as shown on Drawings.

2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Director's Representative specifically approves such deviations in writing.
3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

B. Qualifications: The person(s) installing the ceiling system and their Supervisor shall be personally experienced in ceiling system work and shall have been regularly employed by a Company installing ceiling systems for a minimum of 5 years.

C. Company Field Advisor: Secure the services of a Company Field Advisor for a minimum of 8 working hours for the following:

1. Attending the pre-installation conference
2. Render advice regarding installation of the ceiling system.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Deliver acoustical tiles, suspension-system components, and accessories to Project site and store them in a fully enclosed, conditioned space where they will be protected against damage from moisture, humidity, temperature extremes, direct sunlight, surface contamination, and other causes.

B. Before installing acoustical tiles, permit them to reach room temperature and a stabilized moisture content.

1.10 FIELD CONDITIONS

A. Environmental Limitations: Do not install acoustical tile ceilings until spaces are enclosed and weathertight, wet-work in spaces is complete and dry, work above ceilings is complete, and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.

1. Pressurized Plenums: Operate ventilation system for not less than 48 hours before beginning acoustical tile ceiling installation.

B. Environmental Requirements: Comply with acoustical units manufacturer's printed temperature and ventilation requirements before, during, and after installation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Source Limitations:

1. Suspended Acoustical Tile Ceilings: Obtain each type of acoustical ceiling tile and its suspension system from single source from single manufacturer.

2. Directly Attached Acoustical Tile Ceilings: Obtain each type of acoustical ceiling tile from single source from single manufacturer.

2.2 PERFORMANCE REQUIREMENTS

A. Delegated Design: Engage a qualified professional engineer, licensed in the State of New York, to design seismic restraints for ceiling systems.

B. Seismic Performance: Suspended ceilings shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.

C. Surface-Burning Characteristics: Comply with ASTM E84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

1. Flame-Spread Index: Class A according to ASTM E1264.
2. Smoke-Developed Index: 450 or less.

D. Fire-Resistance Ratings: Comply with ASTM E119; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

1. Indicate design designations from UL or from the listings of another qualified testing agency.

E. Structural Performance and Suspension System Types:
1. Type ID/CG: Intermediate duty, direct hung, concealed grid. (Minimum load carrying capability of main runners: 12 lb/lin ft).

2.3 ACOUSTICAL TILES (see basis of design drawings)

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

1. Armstrong World Industries, Inc.
2. CertainTeed Corporation; Saint-Gobain North America.
3. USG Corporation.
4. Approved equivalent.

B. Acoustical Tile Standard: Provide manufacturer's standard tiles of configuration indicated that comply with ASTM E1264 classifications as designated by type, form, pattern, acoustical rating, and light reflectance unless otherwise indicated.

C. Classification: Provide fire-resistance-rated tiles as follows:

1. Type and Form: Type III, mineral base with painted finish; Form 1, nodular.
2. Pattern: E (lightly textured).

D. Color: White.

E. Light Reflectance (LR): Not less than0.75 or greater.

F. Ceiling Attenuation Class (CAC): Not less than30 or greater.

G. Noise Reduction Coefficient (NRC): Not less than 0.50-0.75.

H. Edge/Joint Detail: Beveled, kerfed, and rabbeted long edges and square, butt on short edges.

I. Thickness: 3/4 inch.

J. Modular Size: As indicated on Drawings.

K. Antimicrobial Treatment: Manufacturer's standard broad spectrum, antimicrobial formulation that inhibits fungus, mold, mildew, and gram-positive and gram-negative bacteria and showing no mold, mildew, or bacterial growth when tested according to ASTM D3273, ASTM D3274, or ASTM G21 and evaluated according to ASTM D3274 or ASTM G21.

2.4 ACCESSORIES

A. Attachment Devices: Size for five times the design load indicated in ASTM C635/C635M, Table 1, "Direct Hung," unless otherwise indicated. Comply with seismic design requirements.

1. Anchors in Concrete: Anchors of type and material indicated below, with holes or loops for attaching hangers of type indicated and with capability to sustain, without failure, a load equal to five times that imposed by ceiling construction, as determined by testing according to ASTM E488 or ASTM E1512 as applicable, conducted by a qualified testing and inspecting agency.

    a. Type: Post-installed expansion anchors.
    b. Corrosion Protection: Carbon-steel components zinc plated according to ASTM B633, Class SC 1 (mild) service condition.
    c. Corrosion Protection: Stainless-steel components complying with ASTM F593 and ASTM F594, Group 1 Alloy 304 or 316.

2. Power-Actuated Fasteners in Concrete: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with clips or other accessory devices for attaching hangers of type indicated, and with capability to sustain, without failure, a load equal to 10 times that imposed by ceiling construction, as determined by testing according to ASTM E1190, conducted by a qualified testing and inspecting agency.

B. Hanger Clips: Galvanized steel clips or clamps specifically designed for attachment to structural steel. Drive-on clips or clamps which depend on friction to hold the device are not acceptable.

C. Welded Studs: Low carbon steel copper flashed studs, 1/4 - 20 UNC, automatic short-cycle welded to a transformer-rectifier power source. When surface on which studs are to receive fireproofing, furnish studs of length to extend one inch below fireproofing.

D. Wire Hangers, Braces, and Ties: Provide wires as follows:

1. Zinc-Coated, Carbon-Steel Wire: ASTM A641, Class 1 zinc coating, soft temper.
2. Stainless-Steel Wire: ASTM A580, Type 304, nonmagnetic.

3. Size: Wire diameter sufficient for its stress at three times hanger design load (ASTM C635, Table 1, "Direct Hung") will be less than yield stress of wire, but not less than 0.135-inch-diameter wire.

E. Hanger Rods: Mild steel, zinc coated or protected with rust-inhibitive paint.

F. Flat Hangers: Mild steel, zinc coated or protected with rust-inhibitive paint.

G. Hanger Tees: Galvanized steel, 16 gage T-hangers for attachment to precast concrete decks.

H. Expansion Anchors: Double cinch type, of soft metal alloy.

I. Angle Hangers: Angles with legs not less than 7/8 inch wide; formed with 0.04-inch- thick, galvanized-steel sheet complying with ASTM A653, G90 coating designation; with bolted connections and 5/16-inch- diameter bolts.

J. Seismic Stabilizer Bars: Manufacturer's standard perimeter stabilizers designed to accommodate seismic forces.

K. Seismic Struts: Manufacturer's standard compression struts designed to accommodate lateral forces.

L. Seismic Clips: Manufacturer's standard seismic clips designed to secure acoustical tiles in-place during a seismic event.

M. Splines: Type and size required for the specified acoustical units.

N. Spring Steel Spacers: Designed to hold border acoustical units in compression.

O. Access Components: Manufacturer’s special components for required access above ceiling line.

P. Miscellaneous Fasteners: Bolts, screws, and other fasteners recommended by suspension system manufacturer and necessary to install the Work.

2.5 METAL EDGE MOLDINGS AND TRIM

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

1. Armstrong World Industries, Inc.
2. CertainTeed Corporation; Saint-Gobain North America.
3. USG Corporation.
4. Approved equivalent.

B. Roll-Formed, Sheet-Metal Edge Moldings and Trim: Type and profile indicated or, if not indicated, manufacturer's standard moldings for edges and penetrations complying with seismic design requirements; formed from sheet metal of same material, finish, and color as that used for of suspension-system runners.

1. For circular penetrations of ceiling, provide edge moldings fabricated to diameter required to fit penetration exactly.
2. Finish: Painted white.

C. Extruded-Aluminum Edge Moldings and Trim: Where indicated, provide manufacturer's extruded-aluminum edge moldings and trim of profile indicated or referenced by manufacturer's designations, including splice plates, corner pieces, and attachment and other clips, complying with seismic design requirements.

1. Clear Anodic Finish: AAMA 611, AA-M12C22A31, Class II, 0.010 mm or thicker.
2. Baked-Enamel or Powder-Coat Finish: Minimum dry film thickness of 1.5 mils. Comply with ASTM C635 and coating manufacturer's written instructions for cleaning, conversion coating, and applying and baking finish.

2.6 ACOUSTICAL SEALANT

A. Acoustical Sealant: Manufacturer's standard sealant complying with ASTM C834 and effective in reducing airborne sound transmission through perimeter joints and openings in building construction as demonstrated by testing representative assemblies according to ASTM E90.

1. Exposed and Concealed Joints: Nonsag, paintable, nonstaining latex sealant.
2. Concealed Joints: Nondrying, nonhardening, nonskinning, nonstaining, gunnable, synthetic-rubber sealant.

2.7 MISCELLANEOUS MATERIALS

A. Acoustical Tile Adhesive: ASTM D 1779, waterproof type recommended in writing by acoustical tile manufacturer, bearing UL label for Class 0-25 flame spread.
1. Furnish adhesive that is certified not to soften firmly adhered existing paint coatings.

B. Staples: 5/16-inch- long, divergent-point staples.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, including structural framing and substrates to which acoustical tile ceilings attach or abut, with Installer present, for compliance with requirements specified in this and other Sections that affect ceiling installation and anchorage and for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Examine acoustical tiles before installation. Reject acoustical tiles that are wet, moisture damaged, or mold damaged.

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

3.2 PREPARATION

A. Testing Substrates: Before adhesively bonding tiles to wet-placed substrates such as cast-in-place concrete or plaster, test and verify that moisture level is below tile manufacturer's recommended limits.

B. Surface Preparation for Existing Substrates: Remove dirt, dust, oil, grease, and other foreign matter that may impair proper bonding of the tile adhesive. Clean and prepare substrates in accordance with the adhesive manufacturer's instructions and as specified.

1. Existing Painted Surfaces: Remove loose, peeling, and blistered coatings. Sand glossy surfaces to a dull finish.
2. Concrete Surfaces: Remove laitance, fins, and other defects that may impair bonding of the tile adhesive or may prevent alignment of tiles in a uniform plane.

C. Measure each ceiling area and establish layout of acoustical tiles to balance border widths at opposite edges of each ceiling. Avoid using less-than-half-width tiles at borders unless otherwise indicated, and comply with layout shown on reflected ceiling plans.

D. Layout openings for penetrations centered on the penetrating items.

3.3 INSTALLATION OF SUSPENDED ACOUSTICAL TILE CEILING SYSTEMS

A. Install suspended acoustical tile ceilings according to ASTM C636, seismic design requirements, and in accordance with manufacturer's written instructions, and CISCA "Ceiling System Handbook".

B. Lay-out grid system as indicated, or if not indicated, lay out to a balanced design with edge units no less than 50 percent of acoustical unit size.

C. Suspend ceiling hangers from building's structural members and as follows:

1. Unless otherwise shown, secure the hangers to the construction as follows:

a. Attachment to Existing Cast-in-Place Concrete: Attach hangers to clip angles, fastened to the concrete with expansion bolts or drive pins.
b. Attachment to Structural Steel Framing: Clinch hanger around top of flange of steel member approximately 135 degrees. If framing member supports roof planks or precast slabs, bolt hanger to center of web or weld to bottom flange. Where applicable, hanger wires may be directly double wound around steel members with wires twisted together.
c. Attachment to Steel Joists: Secure hanger with special clip or clamp designed for such use. Where applicable, hanger wires may be directly double wound around steel members with wires twisted together.
d. Attachment to Precast Tees, Slabs, and Planks: Insert "T" hangers through joints between the units. Where concrete fill is required, lay out and install hangers prior to placing fill.
e. Attachment to Steel Decks: Secure hangers with welded studs. Locate studs as close to the deck supports as possible. Install studs in accordance with manufacturer's printed instructions. After installation, clean stud welds and repair the affected areas

of deck and studs with cold galvanizing compound. Attach hangers to studs with double nuts.

f. Attachment to Wood Framing (Except Trusses): Secure hangers with threaded fasteners.

g. Attachment to Wood Trusses: Double wind hanger wire around bottom chord member and twist wire together securely.

2. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structure or of ceiling suspension system.
3. Splay hangers only where required to miss obstructions; offset resulting horizontal forces by bracing, counter splaying, or other equally effective means.
4. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with location of hangers at spacings required to support standard suspension-system members, install supplemental suspension members and hangers in form of trapezes or equivalent devices.
5. Secure wire hangers to ceiling suspension members and to supports above with a minimum of three tight turns. Connect hangers directly to structure or to inserts, eye screws, or other devices that are secure and appropriate for substrate and that will not deteriorate or otherwise fail due to age, corrosion, or elevated temperatures.
6. Secure flat, angle, channel, and rod hangers to structure, including intermediate framing members, by attaching to inserts, eye screws, or other devices that are secure and appropriate for both the structure to which hangers are attached and the type of hanger involved. Install hangers in a manner that will not cause them to deteriorate or fail due to age, corrosion, or elevated temperatures.
7. Do not support ceilings directly from permanent metal forms or floor deck. Fasten hangers to cast-in-place hanger inserts, postinstalled mechanical or adhesive anchors, or power-actuated fasteners that extend through forms into concrete.
8. When steel framing does not permit installation of hanger wires at spacing required, install carrying channels or other supplemental support for attachment of hanger wires.
9. Do not attach hangers to steel deck tabs.
10. Do not hang grid system from walls, columns, ducts, pipes, and conduit.
11. Do not attach hangers to steel roof deck. Attach hangers to structural members.
12. Space hangers not more than 48 inches o.c. along each member supported directly from hangers unless otherwise indicated; provide hangers not more than 8 inches from ends of each member.
13. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced standards.

D. Secure bracing wires to ceiling suspension members and to supports with a minimum of four tight turns. Suspend bracing from building's structural members as required for hangers without attaching to permanent metal forms, steel deck, or steel deck tabs. Fasten bracing wires into concrete with cast-in-place or postinstalled anchors.

E. Install edge moldings and trim of type indicated at perimeter of acoustical ceiling area and where necessary to conceal edges of acoustical tiles.

1. Apply acoustical sealant in a continuous ribbon concealed on back of vertical legs of moldings before they are installed.
2. Screw attach moldings to substrate at intervals not more than 16 inches o.c. and not more than 3 inches from ends. Miter corners accurately and connect securely.

3. Do not use exposed fasteners, including pop rivets, on moldings and trim.

F. Install suspension-system runners so they are square and securely interlocked with one another. Remove and replace dented, bent, or kinked members.

3.4 ERECTION TOLERANCES

A. Suspended Ceilings: Install main and cross runners level to a tolerance of 1/8 inch in 12 feet, non-cumulative.

B. Directly Attached Ceilings: Install bottom surface of tiles to a tolerance of 1/8 inch in 12 feet and not exceeding 1/4 inch cumulatively.

C. Moldings and Trim: Install moldings and trim to substrate and level with ceiling suspension system to a tolerance of 1/8 inch in 12 feet, non-cumulative.

3.5 FIELD QUALITY CONTROL

A. Special Inspections: The State will engage a qualified special inspector to perform the following special inspections:

1. Periodic inspection during the installation of suspended ceiling grids according to ASCE/SEI 7.

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

C. Perform the following tests and inspections of completed installations of acoustical tile ceiling hangers and anchors and fasteners in successive stages and when installation of ceiling suspension systems on each floor has reached 20 percent completion, but no tiles have been installed. Do not proceed with installations of acoustical tile ceiling hangers for the next area until test results for previously completed installations of acoustical tile ceiling hangers show compliance with requirements.

1. Within each test area, testing agency will select one of every 10 power-actuated fasteners and postinstalled anchors used to attach hangers to concrete and will test them for 200 lbf of tension; it will also select one of every two postinstalled anchors used to attach bracing wires to concrete and will test them for 440 lbf of tension.
2. When testing discovers fasteners and anchors that do not comply with requirements, testing agency will test those anchors not previously tested until 20 pass consecutively and then will resume initial testing frequency.

D. Acoustical tile ceiling hangers, anchors, and fasteners will be considered defective if they do not pass tests and inspections.

E. Prepare test and inspection reports.

3.6 ADJUSTING

A. Clean exposed surfaces of acoustical tile ceilings, including trim and edge moldings. Comply with manufacturer's written instructions for cleaning and touchup of minor finish damage.

B. Remove and replace tiles and other ceiling components that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

END OF SECTION 095123

SECTION 096513 - RESILIENT BASE AND ACCESSORIES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Thermoplastic-rubber base.

1.2 SUBMITTALS

A. General: Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Manufacturer’s installation instructions shall be provided along with product data.

C. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).

D. Product Data: For each type of product.

E. Sustainable Design Submittals:

F. Samples: For each exposed product and for each color and texture specified, not less than 12 inches long.

G. Samples for Initial Selection: For each type of product indicated.

H. Samples for Verification: For each type of product indicated and for each color, texture, and pattern required in manufacturer's standard-size Samples, but not less than 12 inches long.

I. Product Schedule: For resilient base and accessory products. Use same designations indicated on Drawings.

1.3 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

   1. Furnish not less than 10 linear feet for every 500 linear feet or fraction thereof, of each type, color, pattern, and size of resilient product installed.

1.4 QUALITY ASSURANCE

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

1. Coordinate mockups in this Section with mockups specified in other Sections.
2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Director's Representative specifically approves such deviations in writing.
3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Store resilient products and installation materials in dry spaces protected from the weather, with ambient temperatures maintained within range recommended by manufacturer, but not less than 50 deg F or more than 90 deg F.

1.6 FIELD CONDITIONS

A. Maintain ambient temperatures within range recommended by manufacturer, but not less than 70 deg F or more than 95 deg F, in spaces to receive resilient products during the following periods:

1. 48 hours before installation.
2. During installation.
3. 48 hours after installation.

B. After installation and until Substantial Completion, maintain ambient temperatures within range recommended by manufacturer, but not less than 55 deg F or more than 95 deg F.

C. Install resilient products after other finishing operations, including painting, have been completed.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

2.2 THERMOPLASTIC-RUBBER BASE See basis of design drawings:

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

1. Armstrong World Industries, Inc.
2. Johnsonite; a Tarkett company.
3. Roppe Corporation; Roppe Holding Company.
4. VPI Corporation.
5. Approved equivalent.

B. Product Standard: ASTM F1861, Type TP (rubber, thermoplastic).

1. Group: I (solid, homogeneous).
2. Style and Location:

a. Style A, Straight: Provide in areas with carpet.
b. Style B, Cove: Provide in areas with resilient floor coverings.
c. Style C, Butt to: Provide in areas indicated.
d. Style D, Sculptured: Provide in areas indicated.

1) Profile: As indicated.

C. Thickness: 0.125 inch.

D. Height: As indicated on Drawings.

E. Lengths: Cut lengths 48 inches long or coils in manufacturer's standard length.

F. Outside Corners: Preformed.

G. Inside Corners: Preformed.

H. Colors: As indicated by manufacturer's designations.

2.3 INSTALLATION MATERIALS

A. Trowelable Leveling and Patching Compounds: Latex-modified, portland-cement-based or blended hydraulic-cement-based formulation provided or approved by resilient-product manufacturer for applications indicated.

B. Adhesives: Water-resistant type recommended by resilient-product manufacturer for resilient products and substrate conditions indicated.

C. Stair-Tread Nose Filler: Two-part epoxy compound recommended by resilient stair-tread manufacturer to fill nosing substrates that do not conform to tread contours.

D. Metal Edge Strips: Extruded aluminum with mill finish, nominal 2 inches wide, of height required to protect exposed edges of flooring, and in maximum available lengths to minimize running joints.

E. Floor Polish: Provide protective, liquid floor-polish products recommended by resilient stair-tread manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, with Installer present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

1. Verify that finishes of substrates comply with tolerances and other requirements specified in other Sections and that substrates are free of cracks, ridges, depressions, scale, and foreign deposits that might interfere with adhesion of resilient products.

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

1. Installation of resilient products indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Prepare substrates according to manufacturer's written instructions to ensure adhesion of resilient products.

B. Concrete Substrates for Resilient Stair Accessories: Prepare horizontal surfaces according to ASTM F710.

1. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.
2. Remove substrate coatings and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by manufacturer. Do not use solvents.
3. Alkalinity and Adhesion Testing: Perform tests recommended by manufacturer. Proceed with installation only after substrate alkalinity falls within range on pH scale recommended by manufacturer in writing, but not less than 5 or more than 10 pH.
4. Moisture Testing: Perform tests so that each test area does not exceed 1000 sq. ft., and perform no fewer than three tests in each installation area and with test areas evenly spaced in installation areas.

a. Anhydrous Calcium Chloride Test: ASTM F1869. Proceed with installation only after substrates have maximum moisture-vapor-emission rate of 3 lb of water/1000 sq. ft. in 24 hours.
b. Relative Humidity Test: Using in-situ probes, ASTM F2170. Proceed with installation only after substrates have a maximum 75 percent relative humidity level measurement.

C. Fill cracks, holes, and depressions in substrates with trowelable leveling and patching compound; remove bumps and ridges to produce a uniform and smooth substrate.

D. Do not install resilient products until materials are the same temperature as space where they are to be installed.

1. At least 48 hours in advance of installation, move resilient products and installation materials into spaces where they will be installed.

E. Immediately before installation, sweep and vacuum clean substrates to be covered by resilient products.

3.3 RESILIENT BASE INSTALLATION

A. Comply with manufacturer's written instructions for installing resilient base.

B. Apply resilient base to walls, columns, pilasters, casework and cabinets in toe spaces, and other permanent fixtures in rooms and areas where base is required.

C. Install resilient base in lengths as long as practical without gaps at seams and with tops of adjacent pieces aligned.

D. Tightly adhere resilient base to substrate throughout length of each piece, with base in continuous contact with horizontal and vertical substrates.

E. Do not stretch resilient base during installation.

F. On masonry surfaces or other similar irregular substrates, fill voids along top edge of resilient base with manufacturer's recommended adhesive filler material.

G. Preformed Corners: Install preformed corners before installing straight pieces.

3.4 RESILIENT ACCESSORY INSTALLATION

A. Comply with manufacturer's written instructions for installing resilient accessories.

B. Resilient Stair Accessories:

1. Use stair-tread-nose filler to fill nosing substrates that do not conform to tread contours.
2. Tightly adhere to substrates throughout length of each piece.
3. For treads installed as separate, equal-length units, install to produce a flush joint between units.

C. Resilient Molding Accessories: Butt to adjacent materials and tightly adhere to substrates throughout length of each piece. Install reducer strips at edges of floor covering that would otherwise be exposed.

3.5 CLEANING AND PROTECTION

A. Comply with manufacturer's written instructions for cleaning and protecting resilient products.

B. Perform the following operations immediately after completing resilient-product installation:

1. Remove adhesive and other blemishes from surfaces.
2. Sweep and vacuum horizontal surfaces thoroughly.
3. Damp-mop horizontal surfaces to remove marks and soil.

C. Protect resilient products from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period.

D. Floor Polish: Remove soil, adhesive, and blemishes from resilient stair treads before applying liquid floor polish.

1. Apply twocoat(s).

E. Cover resilient products subject to wear and foot traffic until Substantial Completion.

END OF SECTION 096513

SECTION 096543 - LINOLEUM FLOORING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:
   1. Linoleum sheet flooring.

1.3 SUBMITTALS

A. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Manufacturer’s installation instructions shall be provided along with product data.

C. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).

D. Product Data: For each type of product.

E. Sustainable Design Submittals:

F. Shop Drawings: For each type of linoleum flooring.

   1. Include flooring layouts, locations of seams, edges, columns, doorways, enclosing partitions, built-in furniture, cabinets, and cutouts.
   2. Show details of special patterns.

G. Samples: For each exposed product and for each color and pattern specified in manufacturer's standard size, but not less than 6-by-9-inch sections.

   1. Heat-Welding Bead: Include manufacturer's standard-size Samples, but not less than 9 inches long, of each color required.

H. Samples for Initial Selection: For each type of linoleum flooring indicated.

I. Samples for Verification: For each type of linoleum flooring, in manufacturer's standard size, but not less than 6-by-9-inch sections of each different color and pattern required.

1. Heat-Welding Bead: Include manufacturer's standard-size Samples, but not less than 9 inches long, of each color required.

J. Heat-Welded Seam Samples: For each linoleum flooring product and welding bead color and pattern combination required; with seam running lengthwise and in center of 6-by-9-inch Sample applied to rigid backing and prepared by Installer for this Project.

K. Product Schedule: For linoleum flooring. Use same designations indicated on Drawings.

L. Qualification Data: For Installer.

1.4 CLOSEOUT SUBMITTALS

A. Maintenance Data: For each type of linoleum flooring to include in maintenance manuals.

1.5 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Floor Tile: Furnish one box for every 50 boxes or fraction thereof, of each type, color, and pattern of floor tile installed.
2. Sheet Flooring: Furnish not less than 10 linear feet for every 500 linear feet or fraction thereof, in roll form and in full roll width for each type, color, and pattern of sheet flooring installed.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: An entity that employs installers and supervisors who are competent in techniques required by manufacturer for flooring installation and seaming methods indicated.

1. Flooring Installers and their Supervisor to be experienced in linoleum flooring installation, including the requirements of the flooring manufacturer, and have been regularly employed by a company engaged in installation of resilient flooring for 5 years minimum.

a. Furnish to the Director’s Representative the names and addresses of 5 similar projects which the foregoing people have worked on during the past 3 years.

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

1. Coordinate mockups in this Section with mockups specified in other Sections.

a. Size: Minimum 100 sq. ft. for each type, color, and pattern in locations directed by Director’s Representative.

2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Director's Representative specifically approves such deviations in writing.
3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Store flooring and installation materials in dry spaces protected from the weather, with ambient temperatures maintained within range recommended by manufacturer, but not less than 65 deg F or more than 90 deg F.

1. Floor Tile: Store on flat surfaces.
2. Sheet Flooring: Store rolls upright.

1.8 FIELD CONDITIONS

A. Maintain ambient temperatures within range recommended by manufacturer, but not less than 70 deg F or more than 95 deg F, in spaces to receive flooring during the following periods:

1. 72 hours before installation.
2. During installation.
3. 72 hours after installation.

B. After installation and until Substantial Completion, maintain ambient temperatures within range recommended by manufacturer, but not less than 55 deg F or more than 95 deg F.

C. Close spaces to traffic during flooring installation.

D. Close spaces to traffic for 72 hours after flooring installation.

E. Install flooring after other finishing operations, including painting, have been completed.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Fire-Test-Response Characteristics: For linoleum flooring, as determined by testing identical products according to ASTM E648 or NFPA 253 by a qualified testing agency.

1. Critical Radiant Flux Classification: Class I, not less than 0.45 W/sq. cm.

2.2 LINOLEUM SHEET FLOORING (see basis of design drawings)

A. Products: Subject to compliance with requirements, provide one of the following:

1. Forbo Industries, Inc.; Marmoleum® Sheet.
2. Johnsonite; a Tarkett company; Lino xf$^{2™}$.
3. Approved equivalent.

B. Linoleum Sheet Flooring: ASTM F2034, Type I, linoleum sheet with backing.

1. Roll Size: In manufacturer's standard length, but not less than 78 inches wide.

C. Thickness: 0.10 inch.

D. Heat-Welding Bead: For seamless installation, solid-strand product of linoleum flooring manufacturer.

1. Colors: Match linoleum flooring.

E. Integral-Flash-Cove-Base Accessories:

1. Cove Strip: 1-inch radius, provided or approved by manufacturer.

F. Colors and Patterns: As selected by Director’s Representative from manufacturer's full range.

2.3 INSTALLATION MATERIALS

A. Trowelable Leveling and Patching Compounds: Latex-modified, portland-cement-based or blended hydraulic-cement-based formulation provided or approved by linoleum flooring manufacturer for applications indicated.

B. Adhesives: Water-resistant type recommended by flooring and adhesive manufacturers to suit products and substrate conditions indicated.

C. Floor Polish: Provide protective, liquid floor-polish products recommended by linoleum flooring manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, with Installer present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

1. Verify that finishes of substrates comply with tolerances and other requirements specified in other Sections and that substrates are free of cracks, ridges, depressions, scale, and foreign deposits that might interfere with adhesion of flooring.

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

3.2 PREPARATION

A. Prepare substrates according to linoleum flooring manufacturer's written instructions to ensure adhesion of flooring.

B. Concrete Substrates: Prepare according to ASTM F710.

1. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.
2. Remove substrate coatings and other substances that are incompatible with flooring adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by linoleum flooring manufacturer. Do not use solvents.
3. Alkalinity and Adhesion Testing: Perform tests recommended by linoleum flooring manufacturer. Proceed with installation only after substrate alkalinity falls within range on pH scale recommended by manufacturer in writing, but not less than 5 or more than 10 pH.
4. Moisture Testing: Perform tests so that each test area does not exceed 1000 sq. ft., and perform no fewer than three tests in each installation area and with test areas evenly spaced in installation areas.

    a. Anhydrous Calcium Chloride Test: ASTM F1869. Proceed with installation only after substrates have maximum moisture-vapor-emission rate of 3 lb of water/1000 sq. ft. in 24 hours.
    b. Relative Humidity Test: Using in-situ probes, ASTM F2170. Proceed with installation only after substrates have a maximum 75 percent relative humidity level measurement.

C. Fill cracks, holes, and depressions in substrates with trowelable leveling and patching compound; remove bumps and ridges to produce a uniform and smooth substrate.

D. Do not install flooring until materials are the same temperature as space where they are to be installed.

1. At least 72 hours in advance of installation, move flooring and installation materials into spaces where they will be installed.

E. Immediately before installation, sweep and vacuum clean substrates to be covered by flooring.

3.3 INSTALLATION, GENERAL

A. Comply with manufacturer's written instructions for installing flooring.

B. Scribe and cut flooring to butt neatly and tightly to vertical surfaces and permanent fixtures, including built-in furniture, cabinets, pipes, outlets, edgings, thresholds, door frames, and nosings.

C. Extend flooring into toe spaces, door reveals, closets, and similar openings.

D. Maintain reference markers, holes, and openings that are in place or marked for future cutting by repeating on flooring as marked on substrates. Use chalk or other nonpermanent marking device.

E. Install flooring on covers for telephone and electrical ducts and similar items in installation areas. Maintain overall continuity of color and pattern between pieces of flooring installed on covers

and adjoining flooring. Tightly adhere flooring edges to substrates that abut covers and to cover perimeters.

F. Adhere flooring to substrates using a full spread of adhesive applied to substrate to produce a completed installation without open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks, and other surface imperfections.

G. Heat-Welded Seams: For seamless installation, comply with ASTM F1516. Rout joints and heat weld with welding bead to fuse sections permanently into a seamless flooring installation. Prepare, weld, and finish seams to produce surfaces flush with adjoining flooring surfaces.

3.4 LINOLEUM SHEET FLOORING INSTALLATION

A. Unroll linoleum sheet flooring and allow it to stabilize before cutting and fitting.

B. Lay out linoleum sheet flooring as follows:

1. Maintain uniformity of flooring direction.
2. Minimize number of seams; place seams in inconspicuous and low-traffic areas, at least 6 inches away from parallel joints in flooring substrates.
3. Match edges of flooring for color shading at seams.
4. Avoid cross seams.
5. Eliminate deformations that result from hanging method used during drying process (stove bar marks).

C. Integral-Flash-Cove Base: Cove flooring to dimension indicated up vertical surfaces. Support flooring at horizontal and vertical junction with cove strip. Butt at top against cap strip.

1. On masonry and other irregular surfaces, fill voids behind base with filler/wall patch.

3.5 CLEANING AND PROTECTION

A. Comply with manufacturer's written instructions for cleaning and protecting linoleum flooring.

B. Perform the following operations immediately after completing linoleum flooring installation:

1. Remove adhesive and other blemishes from surfaces.
2. Sweep and vacuum surfaces thoroughly.
3. Damp-mop surfaces to remove marks and soil.

C. Protect linoleum flooring from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period.

D. Floor Polish: Remove soil, adhesive, and blemishes from linoleum flooring surfaces before applying liquid floor polish.

1. Apply three coat(s).

E. After allowing drying room film (yellow film caused by linseed oil oxidation) to disappear, cover linoleum flooring until Substantial Completion.

END OF SECTION 096543

SECTION 099123 - INTERIOR PAINTING

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes surface preparation and the application of paint systems on interior substrates.
   1. Gypsum board.

B. Work under this Contract shall also include, but not necessarily be limited to:

   1. Labor, materials, tools and other equipment, services and supervision required to complete all interior painting and decorating work as indicated on Finish Schedules and to the full extent of the drawings and specifications.
   2. Moisture testing of substrates.
   3. Surface preparation of substrates as required for acceptance of paint, including cleaning, small crack repair, patching, caulking, and making good surfaces and areas to the limits defined under MPI Architectural Painting Manual preparation requirements.
   4. Specific pre-treatments noted herein or specified in the MPI Architectural Painting Manual.
   5. Sealing / priming surfaces for painting in accordance with MPI Architectural Painting Manual requirements.
   6. Provision of safe and adequate ventilation as required over and above temporary ventilation supplied by others, where toxic and/or volatile / flammable materials are being used.

C. Related Requirements:

D. Refer to drawings and schedules (e.g., Finish Schedule) for type, location and extent of interior painting required.

1.2 REFERENCES

A. Master Painters Institute Inc., MPI Architectural Painting Manual. www.specifypaint.us.

1.3 DEFINITIONS

A. MPI Gloss Level 1 (Matte or Flat): Not more than five units at 60 degrees and 10 units at 85 degrees, according to ASTM D523.

B. MPI Gloss Level 2 (Velvet): Not more than 10 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D523.

C. MPI Gloss Level 3 (Eggshell): 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D523.

D. MPI Gloss Level 4 (Satin): 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D523.

E. MPI Gloss Level 5 (Semi-Gloss): 35 to 70 units at 60 degrees, according to ASTM D523.

F. MPI Gloss Level 6 (Gloss): 70 to 85 units at 60 degrees, according to ASTM D523.

G. MPI Gloss Level 7 (High Gloss): More than 85 units at 60 degrees, according to ASTM D523.

1.4 SUBMITTALS

A. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Manufacturer's installation instructions shall be provided along with product data.

C. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).

D. Painting Schedule: Cross-referenced Painting Schedule listing all interior substrates to be painted and specified finish paint type designation; product name and manufacturer, recommended primers and product numbers, and finish paint color designation for each substrate to be painted.

1. Designate interior substrates by building name and number, floor, room name and number, and surface to be painted.

E. Product Data: For each type of product. Include preparation requirements and application instructions.

1. Include Printout of current "MPI Approved Products List" for each product category specified, with the proposed product highlighted.
2. Indicate VOC content.
3. Manufacturer's standard colors in the form of actual fan decks.

F. Sustainable Design Submittals:

G. Samples for Initial Selection: For each type of topcoat product.

H. Samples for Verification: For each type of paint system and in each color and gloss of topcoat.

1. Submit Samples on rigid backing, 8 inches square.
2. Apply coats on Samples in steps to show each coat required for system.
3. Label each coat of each Sample.
4. Label each Sample for location and application area.

I. Contractor's Qualifications: Submit documentation demonstrating compliance with requirements in Quality Assurance Article.

J. Certification of Volatile Organic Compounds: Submit certified list demonstrating compliance requirements in Quality Assurance Article.

1.5 QUALITY ASSURANCE

A. Volatile Organic Compounds (VOCs) Regulatory Requirements: Chapter III of Title 6 of the official compilation of Codes, Rules and Regulations of the State of New York (Title 6 NYCRR), Part 205 Architectural Surface Coatings.

1. Certificate of Compliance: List of each paint product to be delivered and installed. List shall include written certification stating that each paint product listed complies with the VOC regulatory requirements in effect at the time of job site delivery and installation.

B. Contractor shall have a minimum of five (5) years proven satisfactory experience and shall show proof before commencement of work that he will maintain a qualified crew of painters throughout the duration of the work. When requested by the Director's Representative, Contractor shall provide a list of the last three comparable repainting jobs including, name, location, specifying authority / project manager, start / completion dates and value of the work.

C. All materials, preparation and workmanship shall conform to the standards contained in the latest edition of the Master Painters Institute (MPI) Architectural Painting Manual (herein referred to as the MPI Manual).

D. The painting contractor shall receive written confirmation of the specific surface preparation procedures and primers used for all fabricated steel items from the fabricator / supplier to ascertain appropriate and manufacturer compatible finish coat materials to be used before painting such work.

E. Mockups: Apply mockups of each paint system indicated and each color and finish selected to verify preliminary selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

1. Director's Representative will select one surface to represent surfaces and conditions for application of each paint system.

a. Vertical and Horizontal Surfaces: Provide samples of at least 100 sq. ft..
b. Other Items: Director's Representative will designate items or areas required.

2. Final approval of color selections will be based on mockups.

a. If preliminary color selections are not approved, apply additional mockups of additional colors selected by Director's Representative at no added cost to the State.

3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Director's Representative 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.

F. Compatibility of Paint Materials: Primers and intermediate paints shall be products manufactured or recommended by the finish paint manufacturer.

1.6 REGULATORY REQUIREMENTS

A. Conform to work place safety regulations for storage, mixing, application and disposal of all paint related materials to requirements of those authorities having jurisdiction.

B. To reduce the amount of contaminants entering waterways, sanitary / storm drain systems or into the ground the following procedures shall be strictly adhered to:

1. Retain cleaning water for water based materials to allow sediments to be filtered out. In no case shall equipment be cleaned using free draining water.
2. Retain cleaners, thinners, solvents and excess paint and place in designated containers and ensure proper disposal.
3. Return solvent and oil-soaked rags used during painting operations for contaminant recovery, proper disposal, or appropriate cleaning and laundering.
4. Dispose of contaminants in an approved legal manner in accordance with hazardous waste regulations.
5. Empty paint cans are to be dry prior to disposal or recycling (where available).
6. Close and seal tightly partly used cans of materials including sealant and adhesive containers and store protected in well ventilated fire safe area at moderate temperature.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver painting materials in sealed, original labeled containers bearing manufacturer's name, brand name, type of paint or coating and color designation, standard compliance, materials content as well as mixing and/or reducing and application requirements.

B. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F.

1. Maintain containers in clean condition, free of foreign materials and residue.
2. Remove rags and waste from storage areas daily.

C. Where toxic and/or volatile / explosive / flammable materials are being used, provide adequate fireproof storage lockers and take necessary precautions and post adequate warnings (e.g. no smoking) as required.

D. Take necessary precautionary and safety measures to prevent fire hazards and spontaneous combustion and to protect the environment from hazard spills. Materials that constitute a fire hazard (paints, solvents, drop clothes, etc.) to be stored in suitable closed and rated containers or removed from the site on a daily basis.

E. Comply with requirements of authorities having jurisdiction, in regard to the use, handling, storage and disposal of hazardous materials.

1.8 FIELD CONDITIONS

A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F.

B. Do not apply paints when relative humidity exceeds 85 percent; at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.

C. Perform no painting work unless a minimum lighting level of 323 Lux (30-foot candles) is provided on surfaces to be repainted.

D. Apply paint only to dry, clean, and adequately prepared surfaces in areas where dust is no longer generated by construction activities such that airborne particles will not affect the quality of finished surfaces.

E. The following items are not to be painted unless otherwise specified, noted or directed:

1. Exposed stainless steel, chrome, copper, bronze, brass, and aluminum.
2. Steel to be encased in cast-in-place concrete.
3. Top flanges of structural beams and girders in composite concrete-steel construction.
4. Factory prefinished items.
5. Exposed structural wood floor joists, subflooring, rafters, roof sheathing and other framing lumber.
6. Galvanized items not exposed in finished spaces.

1.9 MAINTENANCE MATERIALS

A. Except as noted below, provide a minimum of 1 gallon of each type and color of paint from same production run (batch mix) used in unopened cans, properly labeled and identified. Store where directed.

1. Paint Type IAL-1: Four gallons, each type.
2. Paint Types IAL-2: Two gallons, each type.
3. Other Paint Types: One gallon, each type.

PART 2 - PRODUCTS

2.1 PAINT MATERIALS, GENERAL

A. MPI Standards: Provide products complying with MPI standards indicated and listed in its "MPI Approved Products List."

B. Material Compatibility:

1. Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
2. For each coat in a paint system, provide products recommended in writing by topcoat manufacturers for use in paint system and on substrate indicated.

C. Colors: As selected by Director’s Representative from manufacturer's full range.

1. 20 percent of surface area will be painted with deep tones.

D. Mechanical, Electrical, and Plumbing Components Colors: Provide paint colors shown on contract drawings or to be selected by the Director from finish paint manufacturers available color selections.

1. Approved finish paint manufacturers to match designated colors of other manufacturers where colors are shown on contract documents.
2. Safety Colors: Industry Standard ANSI Safety Colors.
3. Fire Protection Systems: Paint exposed piping, and handles of valves serving the system as specified below:

    a. Sprinkler Systems: Red piping, and green valve handles.
    b. Standpipe Systems: Red piping, and red valve handles.
    c. Combination Sprinkler/Standpipe Systems: Red piping, and yellow valve handles.

4. Do not paint equipment with factory finish paint.
5. Color Coding: Apply exposed insulated and uninsulated piping finish paints in the following colors when piping is located in the following applicable rooms or spaces:

    a. Applicable Rooms and Spaces: Mechanical Equipment Rooms, Steam Service Rooms, Refrigeration Machine Rooms, Boiler Rooms, Penthouse Mechanical Equipment Rooms and Power Houses.
    b. Color code as follows:

        1) Air, Compressed: Safety Green.
        2) Air, Control: Safety Green.
        3) Air, Medical: Safety yellow.
        4) Ammonia, Gas and Liquid: Safety Yellow.
        5) Brine: Safety Green.
        6) Carbon Dioxide: Safety Red.
        7) Dangerous Materials: Safety Yellow.
        8) Engine Exhausts: Safety Yellow.
        9) Flue Gases: Safety Yellow.
        10) Gas, Natural and Manufactured: Safety Yellow.
        11) Gasoline: Safety Yellow.
        12) Glycol and Glycol/Water Mixtures: Safety Yellow.
        13) Nitrous Oxide: Safety Blue.
        14) Oils, Fuel and Lubrications: Safety Yellow.
        15) Oxygen: Safety Green.
        16) Pneumatic Tube System s: Safety Green.
        17) Refrigerants: Safety Yellow.
        18) Sewers, Storm and Sanitary: Safety Yellow.
        19) Steam; Supply, Condensate Return and Exhaust: Safety Yellow.
        20) Vacuum: Safety Green.
        21) Vent, Atmospheric: Safety Green.
        22) Water, Up to 140 Degrees Fahrenheit: Safety Green.
        23) Water, 141 Degrees and Above: Safety Yellow.

    c. Other Colors:

        1) Exposed Ductwork: Gray.

2) Insulated and Uninsulated Equipment: Gray.

2.2 PAINT MATERIAL MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by the following:

1. Behr Paint
2. Benjamin Moore & Co.
3. Cloverdale Paint.
4. Dunn-Edwards
5. Pratt & Lambert.
6. PPG Architectural.
7. Sherwin-Williams.
8. Or equal.

B. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to products listed in the Interior Painting Schedule for the paint category indicated.

2.3 PAINT MATERIALS

A. Primers and Sealers:

1. Type ARP: Primer, alkali resistant, water based, MPI #3. Provide one of the following:

   a. Benjamin Moore: Ultra Spec Masonry Int/Ext 100 Acylic Sealer.
   b. PPG Architectural: Perma-Crete Interior/Exterior Alkali Resistant Primer.
   c. Sherwin-Williams: PrepRite ProBlock Interior/Exterior Latex Primer/Sealer.
   d. Or equal.

2. Type LBF: Block filler, latex, interior/exterior, MPI #4. Provide one of the following:

   a. Benjamin Moore: Ultra Spec Hi-Build Masonry Block Filler.
   b. PPG Architectural: Speedhide Int./Ext. Masonry Hi Fill Latex Block Filler.
   c. Sherwin-Williams: Pro Industrial Heavy Duty Block Filler.
   d. Or equal.

3. Type TCL: Textured coating, latex, flat, MPI #42. Provide one of the following:

   a. Benjamin Moore: Coronado Texcrete Waterborne Medium Texture Waterproofer.
   b. PPG Architectural: Perma-Crete Textured Coating.
   c. Sherwin-Williams: ConFlex Flexible Waterproofer-Textured.
   d. Or equal.

4. Type CFS: Sealer, water based, for concrete floors, MPI #99. Provide one of the following:

   a. Behr Paint: Behr Premium Floor Coatings Wet-Look Sealer High Gloss.
   b. PPG Architectural: Perma-Crete Plex-Seal WB Interior/Exterior Clear Sealer.
   c. Sherwin-Williams: H & C Clarishield Water-Based Wet-Look Sealer.

d. Or equal.

5. Type IAL-P: Primer Sealer, Latex, Interior MPI #50. Provide one of the following:

   a. Benjamin Moore & Co.: Super Hide Zero VOC Latex Primer.
   b. PPG Architectural: Speedhide Zero Interior VOC Latex Sealer.
   c. Sherwin-Williams: ProMar 200 Zero Interior Latex Primer.
   d. Or equal.

6. Type IAL-PW: Primer, Latex, for Interior Wood MPI #39. Provide one of the following:

   a. Benjamin Moore & Co.: Multi-Purpose Primer.
   b. PPG Architectural: Seal Grip Interior/Exterior Acrylic Universal Primer/Sealer.
   c. Sherwin-Williams: Multi-Purpose Latex Primer/Sealer.
   d. Or equal.

7. Type IAL-SB: Primer, Stain Blocking, Water Based: MPI #137. Provide one of the following:

   a. Benjamin Moore & Co.: Fresh Start High-Hiding All Purpose Primer.
   b. PPG Architectural: Spectrum Paint Rhino-Grip 8000 Int/Ext Universal Primer.
   c. Sherwin-Williams: Multi-Purpose Latex Primer/Sealer.
   d. Or equal.

8. Type IAL-P-LO: Primer Sealer, Interior, Institutional Low Odor/VOC. MPI #149. Provide one of the following:

   a. Benjamin Moore & Co.: Ultra Spec 500; Waterborne Interior Primer.
   b. PPG Architectural: Speedhide Zero Interior Zero VOC Latex Sealer.
   c. Sherwin-Williams: ProMar 200 Zero; Interior Latex Primer.
   d. Or equal.

1. Type CFS: Sealer, water based, for concrete floors, MPI #99. Provide one of the following:

   a. Behr Paint: Behr Premium Floor Coatings Wet-Look Sealer High Gloss.
   b. PPG Architectural: Perma-Crete Plex-Seal WB Interior/Exterior Clear Sealer.
   c. Sherwin-Williams: H & C Clarishield Water-Based Wet-Look Sealer.
   d. Or equal.

B. Water-Based Paints:

1. Type IAL-1: Latex, Interior, Flat, (Gloss Level 1) MPI #53. Provide one of the following:

   a. Benjamin Moore & Co.: Super Hide Zero VOC Interior Flat.
   b. PPG Architectural: Speedhide Pro EV Zero VOC Latex Flat.
   c. Sherwin-Williams: SuperPaint Interior Latex Flat.
   d. Or equal.

2. Type IAL-2: Latex, Interior, (Gloss Level 3) MPI #52. Provide one of the following:

   a. Benjamin Moore & Co.: Super Hide Zero VOC Interior Low Eggshell.

b. PPG Architectural: Speedhide Zero Interior Satin.
c. Sherwin-Williams: ProMar 200 Zero VOC Interior Latex Eg-Shel.
d. Or equal.

3. Type IAL-3: Latex, Interior, Semigloss, (Gloss Level 5). MPI #54. Provide one of the following:

a. Benjamin Moore & Co.: Ultra Spec 500 Interior Semi-Gloss.
b. PPG Architectural: Speedhide Zero Interior Semi-Gloss.
c. Sherwin-Williams: ProMar 200 Zero VOC Interior Latex Semi-Gloss.
d. Or equal.

4. Type IAL-4: Latex, Interior, Gloss, (Gloss Level 6, except Minimum Gloss of 65 Units at 60 Degrees) MPI #114. Provide one of the following:

a. Benjamin Moore & Co.: Ultra Spec HP D.T.M. Acrylic Gloss Enamel.
b. PPG Architectural: Advantage 900 Int/Ext Trim & Door Gloss.
c. Sherwin-Williams: Pro Industrial DTM Acrylic Gloss.
d. Or equal.

5. Type IAL-1-LO: Latex, Interior, Institutional Low Odor/VOC, Flat (Gloss Level 1) MPI #143. Provide one of the following:

a. Benjamin Moore & Co.: Eco Spec WB Interior Latex Flat Finish.
b. PPG Architectural: Speedhide Zero Interior Zero VOC Latex Flat.
c. Sherwin-Williams: ProMar 200 Zero VOC Interior Latex Flat.
d. Or equal.

6. Type IAL-2-LO: Latex, Interior, Institutional Low Odor/VOC (Gloss Level 3). MPI #145. Provide one of the following:

a. Benjamin Moore & Co.: Super Hide Zero VOC Interior Low Eggshell.
b. PPG Architectural: Manor Hall Interior 100% Acrylic Satin.
c. Sherwin-Williams: ProMar 200 HP Zero VOC Interior Acrylic Eg-Shel.
d. Or equal.

7. Type IAL-3-LO: Latex, Interior, Institutional Low Odor/VOC, Semigloss (Gloss Level 5). MPI #147. Provide one of the following:

a. Benjamin Moore & Co.: Ultra Spec 500 Interior Semi-Gloss.
b. PPG Architectural: Speedhide Zero Interior Semi-Gloss.
c. Sherwin-Williams: Pro Industrial Acrylic Semi-Gloss Coating.
d. Or equal.

8. Type IAL-4-LO: Latex, Interior, Institutional Low Odor/VOC, Gloss (Gloss Level 6) MPI #148. Provide one of the following:

a. Dunn-Edwards: ENDURACOAT Interior/Exterior Gloss Industrial Maintenance Coating.
b. Pratt & Lambert: Krylon Industrial Waterborne Acrylic Enamel Gloss White Base.
c. Sherwin-Williams: Pro Industrial Acrylic Gloss Coating.

d. Or equal.

9. Type DFL-1: Dry Fall, Latex, Flat. MPI #118. Provide one of the following:

a. Benjamin Moore & Co.: Latex Dry Fall Flat.
b. PPG Architectural: Speedhide Super Tech WB Interior Dry Fog Flat Latex.
c. Sherwin-Williams: Pro Industrial Waterborne Acrylic Dryfall.
d. Or equal.

10. Type DFL-2: Dry Fall, Latex, (MPI Gloss Level 3). MPI #155. Provide one of the following:

a. Benjamin Moore & Co.: Latex Dry Fall Eggshell.
b. PPG Architectural: Speedhide Super Tech WB Interior Eggshell 100% Acrylic Dry-Fog.
c. Sherwin-Williams: Pro Industrial Waterborne Dryfall Eg-Shel.
d. Or equal.

11. Type DFL-3: Dry Fall, Latex, Semi-Gloss (MPI Gloss Level 5). MPI #226. Provide one of the following:

a. Benjamin Moore & Co.: Latex Dry Fall Semi-Gloss.
b. PPG Architectural: Speedhide Super Tech WB Interior Semi-Gloss 100% Acrylic Dry Fog Latex.
c. Sherwin-Williams: Pro Industrial Waterborne Acrylic Dryfall Semi-Gloss.
d. Or equal.

C. Solvent-Based Paints:

1. Type EAP: Alkyd, Interior, Gloss (Gloss Level 6) MPI #48. Provide one of the following:

a. Benjamin Moore & Co.: Super Spec HP Urethane Alkyd Gloss Enamel.
b. PPG Architectural: Protective & Marine Coatings Industrial Alkyd Gloss.
c. Sherwin-Williams: Industrial Enamel HS.
d. Or equal.

D. Floor Coatings:

1. Type EPE: Floor Paint, Latex, Low Gloss (Maximum Gloss Level 3): MPI #60.

a. Cloverdale Paint: Porch & Floor Enamel
b. PPG Architectural: Floor & Porch Enamel
c. Sherwin Williams: ArmorSeal Tread-Plex.
d. Or equal.

E. Epoxy Coatings:

1. Type EP: Epoxy, Gloss: MPI #77. Provide one of the following:

a. Cloverdale Paint: ClovaCoat 300.
b. Sherwin-Williams: Protective & Marine Tile-Clad HS Epoxy.

c. Or equal.

2. Type EPHB: Epoxy, High-Build, Low Gloss MPI #108. Provide one of the following:

a. Benjamin Moore & Co.: Corotech Polyamide Epoxy Gloss.
b. PPG Architectural: Protective & Marine Coatings Aquapon High Build Epoxy.
c. Sherwin-Williams: Macropoxy 646 Fast Cure Epoxy.
d. Or equal.

F. Polyurethane Coatings:

1. Paint Type AU: Polyurethane, Two-Component, Pigmented, Gloss (Gloss Level 6) MPI #72. Provide one of the following:

a. Benjamin Moore & Co.: Corotech Aliphatic Acrylic Urethane Gloss.
b. PPG Architectural: Protective & Marine Coatings Pitthane Ultra Gloss 95-812 Series.
c. Sherwin-Williams: Protective & Marine Acrolon 218 HS.
d. Or equal.

2.4 SOURCE QUALITY CONTROL

A. Testing of Paint Materials: The Director's Representative reserves the right to invoke the following procedure:

1. The Director's Representative will engage the services of a qualified testing agency to sample paint materials. Contractor will be notified in advance and may be present when samples are taken. If paint materials have already been delivered to Project site, samples may be taken at Project site. Samples will be identified, sealed, and certified by testing agency.
2. Testing agency will perform tests for compliance with product requirements.
3. The Director's Representative may direct Contractor to stop applying paints if test results show materials being used do not comply with product requirements. Contractor shall remove noncomplying paint materials from Project site, pay for testing, and repaint surfaces painted with rejected materials. Contractor will be required to remove rejected materials from previously painted surfaces if, on repainting with complying materials, the two paints are incompatible.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:

1. Concrete: 12 percent.
2. Fiber-Cement Board: 12 percent.
3. Masonry (Clay and CMUs): 12 percent.
4. Wood: 15 percent.
5. Gypsum Board: 12 percent.
6. Plaster: 12 percent.

C. Gypsum Board Substrates: Verify that finishing compound is sanded smooth.

D. Plaster Substrates: Verify that plaster is fully cured.

E. Spray-Textured Ceiling Substrates: Verify that surfaces are dry.

F. Verify suitability of substrates, including surface conditions and compatibility, with existing finishes and primers.

G. Proceed with coating application only after unsatisfactory conditions have been corrected.

1. Application of coating indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates and paint systems indicated.

B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.

1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.

C. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.

1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.

D. Concrete Substrates: Remove release agents, curing compounds, efflorescence, and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces to be painted exceeds that permitted in manufacturer's written instructions.

E. Steel Substrates: Remove rust, loose mill scale, and shop primer, if any. Clean using methods recommended in writing by paint manufacturer but not less than the following:

1. SSPC-SP 2.
2. SSPC-SP 3.
3. SSPC-SP 7/NACE No. 4.
4. SSPC-SP 11.

F. Shop-Primed Steel Substrates: Clean field welds, bolted connections, and areas where shop paint is abraded. Paint exposed areas with the same material as used for shop priming to comply with SSPC-PA 1 for touching up shop-primed surfaces.

G. Wood Substrates:

1. Scrape and clean knots, and apply coat of knot sealer before applying primer.
2. Sand surfaces that will be exposed to view, and dust off.
3. Prime edges, ends, faces, undersides, and backsides of wood.
4. After priming, fill holes and imperfections in the finish surfaces with putty or plastic wood filler. Sand smooth when dried.

3.3 APPLICATION

A. Apply paints according to manufacturer's written instructions and to recommendations in "MPI Manual."

1. Use applicators and techniques suited for paint and substrate indicated.
2. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
3. Paint front and backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.
4. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
5. Primers specified in painting schedules may be omitted on items that are factory primed or factory finished if acceptable to topcoat manufacturers.

B. Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Tint undercoats to match color of topcoat, but provide sufficient difference in shade of undercoats to distinguish each separate coat.

C. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.

D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

E. Painting Fire Suppression, Plumbing, HVAC, Electrical, Communication, and Electronic Safety and Security Work:

1. Paint the following work where exposed in equipment rooms:

a. Equipment, including panelboards.
b. Uninsulated metal piping.
c. Uninsulated plastic piping.
d. Pipe hangers and supports.
e. Metal conduit.

f. Plastic conduit.
g. Tanks that do not have factory-applied final finishes.
h. Duct, equipment, and pipe insulation having cotton or canvas insulation covering or other paintable jacket material.

2. Paint the following work where exposed in occupied spaces:

a. Equipment, including panelboards.
b. Uninsulated metal piping.
c. Uninsulated plastic piping.
d. Pipe hangers and supports.
e. Metal conduit.
f. Plastic conduit.
g. Duct, equipment, and pipe insulation having cotton or canvas insulation covering or other paintable jacket material.
h. Other items as directed by Director's Representative.

3. Paint portions of internal surfaces of metal ducts, without liner, behind air inlets and outlets that are visible from occupied spaces.

3.4 FIELD QUALITY CONTROL

A. Dry Film Thickness Testing: The Director's Representative may engage the services of a qualified testing and inspecting agency to inspect and test paint for dry film thickness.

1. Contractor shall touch up and restore painted surfaces damaged by testing.
2. If test results show that dry film thickness of applied paint does not comply with paint manufacturer's written recommendations, Contractor shall pay for testing and apply additional coats as needed to provide dry film thickness that complies with paint manufacturer's written recommendations.

3.5 CLEANING AND PROTECTION

A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.

B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.

C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Director's Representative, and leave in an undamaged condition.

D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.6 SURFACES, GENERAL

A. Surfaces: Unless otherwise specified or shown on the drawings, paint surfaces as follows:

1. Interior Surfaces:

a. Walls: Paint Type IAL-2-LO except as noted below:

1) Living Units: Paint Type IAL-3-LO.
2) Toilets and Kitchens: Paint Type IAL-3-LO.
3) Shower Rooms, Janitor Closets and Other Wet Areas Paint Type IAL-4-LO.

b. Doors, Windows, Frames and Trim: Paint Type IAL-3-LO except as noted below:

1) Use Paint Type IAL-4-LO where walls are Paint

2. Unless otherwise noted, paint interior unremovable and exposed wall and ceiling air supply and return grilles; plumbing pipes; electrical panel and fuse boxes, raceways and conduits; heating convector cabinets, radiators, radiator cabinets, unit heaters, and similar existing and installed devices and equipment by other trades.

a. Paint to match adjacent wall or ceiling surfaces.
b. Paint exposed surfaces when any part of the surface is on or within 8 inches of ceiling or wall surface to be painted.
c. Paint visible interior surfaces behind grilles, guards and screens.

3. Doors and Frames: Unless otherwise noted, paint doors and frames the same color in the next highest gloss as adjacent wall surfaces.

a. Where walls are not the same color on both sides of a door frame, change color at the inside corner of the frame stop.
b. Prime and finish paint door faces and edges before installation.

1) Paint door edges the same paint type color as the exterior side of the door.

c. Do not paint door components which are clearly not intended to be painted such as non-ferrous hardware, frame mutes, and weather stripping.
d. Do not allow doors and frames to touch until paint is thoroughly dry on both surfaces.

4. Window Frames and Sash: Unless otherwise noted, paint window frames and sash the same color as adjacent wall surfaces.

a. Where interior walls are not the same color on both sides, change paint color along the inside concealed corner of door frame stops.
b. Do not paint window components which are clearly not intended to be painted such as prefinished frames, sliding metal or plastic contacts, weatherstripping, and non-ferrous hardware.

c. Do not allow operable doors, windows and frames to touch until paint is thoroughly dry on both surfaces.

5. Ferrous Metal Door and Window Hardware: Unless otherwise noted, prime and paint to match adjacent doors, windows and frames.
6. Case Work: Paint factory unfinished exposed and semiexposed surfaces when doors and drawers are either open or closed including:

   a. Both faces and edges of cabinet doors, shelving, dividers including interior side, rear, and bottom panel surfaces.
   b. Both faces and edges of drawer face, side, rear, and bottom panels.
   c. Exposed bottom or underside of case work more than 4 feet above the floor.

7. Do not paint plastic laminate surfaces, special countertop materials, glazing, factory finished surfaces, finish hardware and similar items clearly not intended to be painted.

3.7 INTERIOR PAINTING SCHEDULE

A. Gypsum Board Substrates:

1. Latex over Latex Sealer System MPI INT 9.2A:

   a. Prime Coat: Primer sealer, latex, interior, MPI #50. Type IAL-P.
   b. Prime Coat: Latex, interior, matching topcoat.
   c. Intermediate Coat: Latex, interior, matching topcoat.
   d. Topcoat: Latex, interior, flat (MPI Gloss Level 1), MPI #53. Type IAL-1.
   e. Topcoat: Latex, interior (MPI Gloss Level 3), MPI #52. Type IAL-2.
   f. Topcoat: Latex, interior, semi-gloss (MPI Gloss Level 5), MPI #54. Type IAL-3.
   g. Topcoat: Latex, interior, gloss (MPI Gloss Level 6, except minimum gloss of 65 units at 60 degrees), MPI #114. Type IAL-4.

2. Institutional Low-Odor/VOC Latex System MPI INT 9.2M:

   a. Prime Coat: Primer sealer, interior, institutional low odor/VOC**,** MPI #149. Type IAL-P-LO.
   b. Intermediate Coat: Latex, interior, institutional low odor/VOC, matching topcoat.
   c. Topcoat: Latex, interior, institutional low odor/VOC, flat (MPI Gloss Level 1), MPI #143. Type IAL-1-LO.
   d. Topcoat: Latex, interior, institutional low odor/VOC (MPI Gloss Level 3), MPI #145. Type IAL-2-LO.
   e. Topcoat: Latex, interior, institutional low odor/VOC, semi-gloss (MPI Gloss Level 5), MPI #147. Type IAL-3-LO.
   f. Topcoat: Latex, interior, institutional low odor/VOC, gloss (MPI Gloss Level 6), MPI #148. Type IAL-4-LO.

END OF SECTION 099123

SECTION 102800 - TOILET, BATH, AND LAUNDRY ACCESSORIES

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. Toilet accessories.
   2. Hand dryers.

1.3 COORDINATION

A. Coordinate accessory locations with other work to prevent interference with clearances required for access by people with disabilities, and for proper installation, adjustment, operation, cleaning, and servicing of accessories.

B. Deliver inserts and anchoring devices set into concrete or masonry as required to prevent delaying the Work.

1.4 SUBMITTALS

A. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Manufacturer’s installation instructions shall be provided along with product data.

C. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).

D. Product Data: For each type of product.

   1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
   2. Include anchoring and mounting requirements, including requirements for cutouts in other work and substrate preparation.
   3. Include electrical characteristics.

E. Samples: For each exposed product and for each finish specified, full size.

   1. Approved full-size Samples will be returned and may be used in the Work.

F. Product Schedule: Indicating types, quantities, sizes, and installation locations by room of each accessory required.

1. Identify locations using room designations indicated.
2. Identify accessories using designations indicated.

G. Delegated-Design Submittal: For grab bars.

1. Include structural design calculations indicating compliance with specified structural-performance requirements.

H. Sample Warranty: For manufacturer's special warranties.

1.5 CLOSEOUT SUBMITTALS

A. Maintenance Data: For accessories to include in maintenance manuals.

1.6 WARRANTY

A. Manufacturer's Special Warranty for Mirrors: Manufacturer agrees to repair or replace mirrors that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, visible silver spoilage defects.
2. Warranty Period: 15 years from date of Substantial Completion.

B. Manufacturer's Special Warranty for Toilet-Compartment Occupancy-Indicator Systems: Manufacturer agrees to repair or replace toilet-compartment occupancy-indicator systems that fail in materials or workmanship within specified warranty period.

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

C. Manufacturer's Special Warranty for Hand Dryers: Manufacturer agrees to repair or replace hand dryers that fail in materials or workmanship within specified warranty period.

1. Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

B. Structural Performance: Design accessories and fasteners to comply with the following requirements:

1. Grab Bars: Installed units are able to resist 250 lbf concentrated load applied in any direction and at any point.

2.2 PUBLIC-USE WASHROOM ACCESSORIES

A. Source Limitations: Obtain public-use washroom accessories from single source from single manufacturer.

B. Recessed Toilet Paper Dispenser (see drawing A-400):
   1. Description: Combination unit with double-roll toilet tissue dispenser and the following:
      a. Removable sanitary-napkin waste receptacle with self-closing, disposal-opening cover.
   2. Mounting: Recessed.
   3. Toilet Tissue Dispenser Capacity: 4-1/2- or 5-inch diameter tissue rolls.
   4. Toilet Tissue Dispenser Operation: Standard.
   5. Material and Finish: Stainless steel, ASTM A480 No. 4 finish (satin)
   6. Lockset: Tumbler type.

C. Automatic Soap Dispenser (See drawing A-400):
   1. Description: Automatic dispenser with infrared sensor to detect presence of hands; battery powered; designed for dispensing soap in lather form.
   2. Mounting: Surface mounted.
   3. Capacity: 30 fluid ounces.
   4. Materials: Stainless steel with satin finish
   5. Refill Indicator: LED indicator.
   6. Low-Battery Indicator: LED indicator.

D. Grab Bar (See drawing A-400):
   1. Mounting: Flanges with concealed fasteners.
   2. Material: Stainless steel, 0.05 inch thick.
      a. Finish: Smooth, ASTM A480 No. 4 finish (satin) on ends and slip-resistant texture in grip area.
   3. Outside Diameter: 1-1/2 inches.
   4. Configuration and Length: [As indicated on Drawing See G-001
   5. Provide additional blocking at locations of grab bar mounting.
   6. Mounting height as indicated on drawings.

E. Sanitary-Napkin Disposal Unit (see A-400):
   1. Mounting: Recessed.
   2. Door or Cover: Self-closing, disposal-opening cover and hinged face panel with tumbler lockset.
   3. Receptacle: Removable.
   4. Material and Finish: Stainless steel, ASTM A480 No. 4 finish (satin)

F. Mirror Unit (see A-400):
   1. Frame: Stainless steel angle, 0.05 inch thick
      a. Corners: Manufacturer's standard
   2. Size: As indicated on Drawings.

3. Hangers: Manufacturer's standard.

2.3 HAND DRYERS

A. Source Limitations: Obtain hand dryers from single source from single manufacturer.
B. High-Speed Air Dryer (see drawing A-400):
   1. Description: High-speed, warm-air hand dryer for rapid hand drying.
   2. Mounting: Surface mounted.
      a. Protrusion Limit: Installed unit protrudes maximum 4 inches from wall surface.
   3. Operation: Infrared-sensor activated with timed power cut-off switch.
      a. Average Dry Time: 12 seconds.
      b. Automatic Shut Off: At 60 seconds.
   4. Maximum Sound Level: 69 dB.
   5. Cover Material and Finish: Stainless steel, ASTM A480 No. 4 finish (satin)
   6. Electrical Requirements: Coordinate with Electrical drawings.

2.4 MATERIALS

A. Stainless Steel: ASTM A240 or ASTM A666, Type 304, 0.031-inch minimum nominal thickness unless otherwise indicated.

B. Brass: ASTM B19, flat products; ASTM B16, rods, shapes, forgings, and flat products with finished edges; or ASTM B30, castings.

C. Steel Sheet: ASTM A1008, Designation CS (cold rolled, commercial steel), 0.036-inch minimum nominal thickness.

D. Galvanized-Steel Sheet: ASTM A653, with G60 hot-dip zinc coating.

E. Galvanized-Steel Mounting Devices: ASTM A153, hot-dip galvanized after fabrication.

F. Fasteners: Screws, bolts, and other devices of same material as accessory unit, unless otherwise recommended by manufacturer or specified in this Section, and tamper and theft resistant where exposed, and of stainless or galvanized steel where concealed.

G. Chrome Plating: ASTM B456, Service Condition Number SC 2 (moderate service).

H. Mirrors: ASTM C1503, Mirror Glazing Quality, clear-glass mirrors, nominal 6.0 mm thick.

2.5 FABRICATION

A. General: Fabricate units with tight seams and joints, and exposed edges rolled. Hang doors and access panels with full-length, continuous hinges. Equip units for concealed anchorage and with corrosion-resistant backing plates.

B. Keys: Provide universal keys for internal access to accessories for servicing and resupplying. Provide minimum of six keys to Director’s Representative.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install accessories according to manufacturers' written instructions, using fasteners appropriate to substrate indicated and recommended by unit manufacturer. Install units level, plumb, and firmly anchored in locations and at heights indicated.

1. Remove temporary labels and protective coatings.

B. Grab Bars: Install to comply with specified structural-performance requirements.

C. Shower Seats: Install to comply with specified structural-performance requirements.

3.2 ADJUSTING AND CLEANING

A. Adjust accessories for unencumbered, smooth operation. Replace damaged or defective items.

B. Clean and polish exposed surfaces according to manufacturer's written instructions.

END OF SECTION 102800

SECTION 123661.16 - SOLID SURFACING COUNTERTOPS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Solid surface material countertops.
2. Solid surface material backsplashes.

1.2 SUBMITTALS

A. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Manufacturer's installation instructions shall be provided along with product data.

C. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).

D. Quality Control Submittals:

1. Qualification Data: For fabricator.

E. Product Data: For countertop materials.

1. Include manufacturer's installation instructions.

F. Shop Drawings: For countertops. Show materials, finishes, edge and backsplash profiles, methods of joining, and cutouts for plumbing fixtures.

1. Show locations and details of joints.
2. Show direction of directional pattern, if any.

G. Samples for Initial Selection: For each type of material exposed to view.

H. Samples for Verification: For the following products:

1. Countertop material, 6 inches square.
2. One full-size solid surface material countertop, with front edge and backsplash, 8 by 10 inches, of construction and in configuration specified.

I. Contract Closeout Submittals

1. Maintenance Data: For solid surface material countertops to include in maintenance manuals. Include Product Data for care products used or recommended by Installer and names, addresses, and telephone numbers of local sources for products.

1.3 QUALITY ASSURANCE

A. Fabricator Qualifications: Shop that employs skilled workers who custom-fabricate countertops similar to that required for this Project, and whose products have a record of successful in-service performance.

B. Installer Qualifications: Fabricator of countertops.

C. Mockups: Build mockups to demonstrate aesthetic effects and to set quality standards for fabrication and execution.

1. Build mockup of typical countertop as indicated on Drawings.

1.4 FIELD CONDITIONS

A. Field Measurements: Verify dimensions of countertops by field measurements after base cabinets are installed but before countertop fabrication is complete.

1.5 COORDINATION

A. Coordinate locations of utilities that will penetrate countertops or backsplashes.

PART 2 - PRODUCTS

2.1 SOLID SURFACE COUNTERTOP MATERIALS

A. Solid Surface Material: Homogeneous-filled plastic resin complying with ISFA 2-01.

1. Type: Provide Standard type unless Special Purpose type is indicated.
2. Colors and Patterns: See basis of design sheet A-620.

2.2 FABRICATION

A. Fabricate countertops according to solid surface material manufacturer's written instructions and to the AWI/AWMAC/WI's "Architectural Woodwork Standards."

1. Grade: Premium.

B. Configuration:

1. Front: Radius edge with apron, 2 inches high with 3/8-inch radius.

2. Backsplash: Radius edge with 3/8-inch radius.
3. End Splash: Matching backsplash

C. Countertops:

1. 1/2-inch thick, homogenous solid surface material with rounded edges.

D. Backsplashes: 1/2-inch thick, homogenous solid surface material with rounded edges.

E. Joints:

1. Fabricate countertops without joints.

F. Cutouts and Holes:

1. Undercounter Plumbing Fixtures: Make cutouts for fixtures in shop using template or pattern furnished by fixture manufacturer. Form cutouts to smooth, even curves.
   a. Provide vertical edges, rounded to 3/8-inch radius at juncture of cutout edges with top surface of countertop, slightly eased at bottom, and projecting 3/16 inch into fixture opening.
2. Fittings: Drill countertops in shop for plumbing fittings, undercounter soap dispensers, and similar items.

2.3 INSTALLATION MATERIALS

A. Adhesive: Product recommended by solid surface material manufacturer.

B. Sealant for Countertops: Comply with applicable requirements in Section 079200 "Joint Sealants."

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates to receive solid surface material countertops and conditions under which countertops will be installed, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of countertops.

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

3.2 INSTALLATION

A. Install countertops level to a tolerance of 1/8 inch in 8 feet, 1/4 inch maximum. Do not exceed 1/64-inch difference between planes of adjacent units.

B. Fasten countertops by screwing through corner blocks of base units into underside of countertop. Predrill holes for screws as recommended by manufacturer. Align adjacent surfaces and, using

adhesive in color to match countertop, form seams to comply with manufacturer's written instructions. Carefully dress joints smooth, remove surface scratches, and clean entire surface.

C. Fasten subtops to cabinets by screwing through subtops into corner blocks of base cabinets. Shim as needed to align subtops in a level plane.

D. Secure countertops to subtops with adhesive according to solid surface material manufacturer's written instructions. Align adjacent surfaces and, using adhesive in color to match countertop, form seams to comply with manufacturer's written instructions. Carefully dress joints smooth, remove surface scratches, and clean entire surface.

E. Install backsplashes and end splashes by adhering to wall and countertops with adhesive. Mask areas of countertops and splashes adjacent to joints to prevent adhesive smears.

F. Complete cutouts not finished in shop. Mask areas of countertops adjacent to cutouts to prevent damage while cutting. Make cutouts to accurately fit items to be installed, and at right angles to finished surfaces unless beveling is required for clearance. Ease edges slightly to prevent snipping.

1. Seal edges of cutouts in particleboard subtops by saturating with varnish.

G. Apply sealant to gaps at walls; comply with Section 079200 "Joint Sealants."

END OF SECTION 123661.16

SECTION 133419 - METAL BUILDING SYSTEMS

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. Structural-steel framing.
2. Insulated Metal Roof Panels
3. Insulated Metal Wall Panels.
4. Accessories.

B. Related Requirements:

1. Section 077253 "Snow Guards" for prefabricated devices designed to hold snow on the roof surface.
2. Section083612 Insulated Sectional Steel Overhead Doors for coiling vehicular doors in metal building systems.

1.3 DEFINITIONS

A. Terminology Standard: See MBMA's "Metal Building Systems Manual" for definitions of terms for metal building system construction not otherwise defined in this Section or in standards referenced by this Section.

1.4 COORDINATION

A. Coordinate sizes and locations of concrete foundations and casting of anchor-rod inserts into foundation walls and footings. Anchor rod installation, concrete, reinforcement, and formwork requirements are specified in Section 033000 – Cast-in-Place Concrete.

B. Coordinate metal panel assemblies with rain drainage work, flashing, trim, and construction of supports and other adjoining work to provide a leakproof, secure, and noncorrosive installation.

1.5 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1. Review methods and procedures related to metal building systems including, but not limited to, the following:

    a. Condition of foundations and other preparatory work performed by other trades.
    b. Structural load limitations.
    c. Construction schedule. Verify availability of materials and erector's personnel, equipment, and facilities needed to make progress and avoid delays.
    d. Required tests, inspections, and certifications.
    e. Unfavorable weather and forecasted weather conditions and impact on construction schedule.

2. Review methods and procedures related to metal roof panel assemblies including, but not limited to, the following:

    a. Compliance with requirements for purlin and rafter conditions, including flatness and attachment to structural members.
    b. Structural limitations of purlins and rafters during and after roofing.
    c. Flashings, special roof details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that will affect metal roof panels.
    d. Temporary protection requirements for metal roof panel assembly during and after installation.
    e. Roof observation and repair after metal roof panel installation.

3. Review methods and procedures related to metal wall panel assemblies including, but not limited to, the following:

    a. Compliance with requirements for support conditions, including alignment between and attachment to structural members.
    b. Structural limitations of girts and columns during and after wall panel installation.
    c. Flashings, special siding details, wall penetrations, openings, and condition of other construction that will affect metal wall panels.
    d. Temporary protection requirements for metal wall panel assembly during and after installation.
    e. Wall observation and repair after metal wall panel installation.

1.6 SUBMITTALS

A. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Manufacturer’s installation instructions shall be provided along with product data.

C. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).

D. Product Data: For each type of metal building system component.

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

a. Insulated Metal roof panels.
b. Insulated Metal wall panels.

E. Submit an Environmental Product Declaration (EPD) from the manufacturer for whole structure or individual components (structural steel framing, steel roof panels, steel wall panels) within this specification section, if available. A statement of the contractor's good faith effort to obtain the EPD shall be provided if not available.

1. Manufacturer-provided EPDs must be Product Specific Type III (Third-Party Reviewed), in adherence with ISO 14025 *Environmental labels and declarations*, ISO 14044 *Environmental management – Life cycle assessment*, and ISO 21930 *Core rules for environmental product declarations of construction products and services.*

F. Shop Drawings: Indicate components by others. Include full building plan, elevations, sections, details and the following:

1. Anchor-Rod Plans: Submit anchor-rod plans and templates before foundation work begins. Include location, diameter, and minimum required projection of anchor rods required to attach metal building to foundation. Indicate column reactions at each location.
2. Structural-Framing Drawings: Show complete fabrication of primary and secondary framing; include provisions for openings. Indicate welds and bolted connections, distinguishing between shop and field applications. Include transverse cross-sections.

a. Show provisions for attaching service walkways platforms and pipe racks.

3. Metal Roof and Wall Panel Layout Drawings: Show layouts of panels including methods of support. Include details of edge conditions, joints, panel profiles, corners, anchorages, clip spacing, trim, flashings, closures, and special details. Distinguish between factory- and field-assembled work; show locations of exposed fasteners.

a. Show roof-mounted items including roof hatches, equipment supports, pipe supports and penetrations, lighting fixtures, and items mounted on roof curbs.
b. Show wall-mounted items including personnel doors, vehicular doors, windows, louvers, and lighting fixtures.
c. Show translucent panels.

4. Accessory Drawings: Include details of the following items, at a scale of not less than 1-1/2 inches per 12 inches:

a. Flashing and trim.
b. Gutters.
c. Downspouts.

G. Samples for Initial Selection: For units with factory-applied finishes.

H. Samples for Verification: For the following products:

1. Panels: Nominal 12 inches long by actual panel width. Include fasteners, closures, and other exposed panel accessories.
2. Flashing and Trim: Nominal 12 inches long. Include fasteners and other exposed accessories.

3. Vapor-Retarder Facings: Nominal 6-inch- square Samples.
4. Windows: Full-size, nominal 12-inch- long frame Samples showing typical profile.
5. Accessories: Nominal 12-inch- long Samples for each type of accessory.

I. Door Schedule: For doors and frames. Use same designations indicated on Drawings. Include details of reinforcement.

1. Door Hardware Schedule: Include details of fabrication and assembly of door hardware. Organize schedule into door hardware sets indicating complete designations of every item required for each door or opening.
2. Keying Schedule: Detail State's final keying instructions for locks. Include schematic keying diagram and index each key set to unique door designations.

J. Delegated-Design Submittal: For metal building systems.

1. Include analysis data indicating compliance with performance requirements and design data signed and sealed by the qualified professional engineer, licensed in the State of New York, responsible for their preparation.

K. Welding certificates.

L. Letter of Design Certification: Signed and sealed by a qualified Professional Engineer, licensed in the State of New York. Include the following:

1. Name and location of Project.
2. Order number.
3. Name of manufacturer.
4. Name of Contractor.
5. Building dimensions including width, length, height, and roof slope.
6. Indicate compliance with AISC standards for hot-rolled steel and AISI standards for cold-rolled steel, including edition dates of each standard.
7. Governing building code and year of edition.
8. Design Loads: Include dead load, roof live load, collateral loads, roof snow load, deflection, wind loads/speeds and exposure, seismic design category or effective peak velocity-related acceleration/peak acceleration, and auxiliary loads (cranes).
9. Load Combinations: Indicate that loads were applied acting simultaneously with concentrated loads, according to governing building code.
10. Building-Use Category: Indicate category of building use and its effect on load importance factors.

M. Erector Certificates: For qualified erector, from manufacturer.

N. Material Test Reports: For each of the following products:

1. Structural steel including chemical and physical properties.
2. Bolts, nuts, and washers including mechanical properties and chemical analysis.
3. Tension-control, high-strength, bolt-nut-washer assemblies.
4. Shop primers.
5. Nonshrink grout.

O. Source quality-control reports.

P. Field Quality-Control Reports.

Q. Surveys: Show final elevations and locations of major members. Indicate discrepancies between actual installation and the Contract Documents. Have surveyor who performed surveys certify their accuracy.

R. Sample Warranties: For special warranties.

1.7 CLOSEOUT SUBMITTALS

A. Maintenance Data: For metal panel finishes and door hardware to include in maintenance manuals.

1.8 QUALITY ASSURANCE

A. Manufacturer Qualifications: A qualified manufacturer.

1. Accreditation: Manufacturer's facility accredited according to the International Accreditation Service's AC472, "Accreditation Criteria for Inspection Programs for Manufacturers of Metal Building Systems."
2. Engineering Responsibility: Preparation of comprehensive engineering analysis and Shop Drawings by a professional engineer who is legally qualified to practice in the State of New York.

B. Erector Qualifications: An experienced erector who specializes in erecting and installing work similar in material, design, and extent to that indicated for this Project and who is acceptable to manufacturer.

C. Welding Qualifications: Qualify procedures and personnel according to the following:

1. AWS D1.1, "Structural Welding Code - Steel."
2. AWS D1.3, "Structural Welding Code - Sheet Steel."

D. Land Surveyor Qualifications: A professional Land Surveyor who practices in jurisdiction where Project is located and who is experienced in providing surveying services of the kind indicated.

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

1. Build mockup of typical wall area as shown on Drawings.
2. Build mockups for typical wall metal panel including accessories.

    a. Size: 48 inches long by 48 inches.

3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Director’s Representative specifically approves such deviations in writing.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Deliver components, sheets, panels, and other manufactured items so as not to be damaged or deformed. Package metal panels for protection during transportation and handling.

B. Unload, store, and erect metal panels in a manner to prevent bending, warping, twisting, and surface damage.

C. Stack metal panels horizontally on platforms or pallets, covered with suitable weathertight and ventilated covering. Store metal panels to ensure dryness, with positive slope for drainage of water. Do not store metal panels in contact with other materials that might cause staining, denting, or other surface damage.

D. Protect foam-plastic insulation as follows:

1. Do not expose to sunlight, except to extent necessary for period of installation and concealment.
2. Protect against ignition at all times. Do not deliver foam-plastic insulation materials to Project site before installation time.
3. Complete installation and concealment of foam-plastic materials as rapidly as possible in each area of construction.

1.10 FIELD CONDITIONS

A. Weather Limitations: Proceed with panel installation only when weather conditions permit metal panels to be installed according to manufacturers' written instructions and warranty requirements.

1.11 WARRANTY

A. Special Warranty on Metal Panel Finishes: Manufacturer agrees to repair finish or replace metal panels that show evidence of deterioration of factory-applied finishes within specified warranty period.

1. Exposed Panel Finish: Deterioration includes, but is not limited to, the following:

a. Color fading more than 5 Hunter units when tested according to ASTM D2244.
b. Chalking in excess of a No. 8 rating when tested according to ASTM D4214.
c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.

2. Finish Warranty Period: 25 years from date of Substantial Completion.

B. Special Weathertightness Warranty for Standing-Seam Metal Roof Panels: Manufacturer agrees to repair or replace standing-seam metal roof panel assemblies that leak or otherwise fail to remain weathertight within specified warranty period.

1. Warranty Period: 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Approved equivalent.

B. Source Limitations: Obtain metal building system components, including primary and secondary framing and metal panel assemblies, from single source from single manufacturer.

2.2 SYSTEM DESCRIPTION

A. Provide a complete, integrated set of mutually dependent components and assemblies that form a metal building system capable of withstanding structural and other loads, thermally induced movement, and exposure to weather without failure or infiltration of water into building interior.

B. Primary-Frame Type:

1. Rigid Clear Span: Solid-member, structural-framing system without interior columns.
2. Rigid Modular: Solid-member, structural-framing system with interior columns.
3. Truss-Frame Clear Span: Truss-member, structural-framing system without interior columns.
4. Truss-Frame Modular: Truss-member, structural-framing system with interior columns.
5. Lean-to: Solid- or truss-member, structural-framing system, designed to be partially supported by another structure.

C. End-Wall Framing: Manufacturer's standard, for buildings not required to be expandable, consisting of primary frame, capable of supporting one-half of a bay design load, and end-wall columns.

D. End-Wall Framing: Engineer end walls to be expandable. Provide primary frame, capable of supporting full-bay design loads, and end-wall columns.

E. Secondary-Frame Type: Manufacturer's standard purlins and joists and exterior-framed (bypass) girts.

F. Eave Height: Manufacturer's standard height, as indicated by nominal height on Drawings.

G. Bay Spacing: As indicated on Drawings.

H. Roof Slope: As indicated on Drawings.

I. Roof System: Manufacturer's standard foamed-insulation-core metal roof panels.

1. Liner Panels: Tapered rib.

J. Exterior Wall System: Manufacturer's standard foamed-insulation-core metal wall panels.

1. Liner Panels: Tapered rib

2.3 PERFORMANCE REQUIREMENTS

A. Delegated Design: Engage a Professional Engineer, licensed in the State of New York, to design metal building system.

B. Structural Performance: Metal building systems shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated according to procedures in MBMA's "Metal Building Systems Manual."

1. Design Loads: As indicated on Drawings.
2. Deflection and Drift Limits: Design metal building system assemblies to withstand serviceability design loads without exceeding deflections and drift limits recommended in AISC Steel Design Guide No. 3 "Serviceability Design Considerations for Steel Buildings."
3. Deflection and Drift Limits: No greater than the following:

    a. Purlins and Rafters: Vertical deflection of 1/360 of the span.
    b. Girts: Horizontal deflection of 1/240 of the span.
    c. Metal Roof Panels: Vertical deflection of 1/360 of the span.
    d. Metal Wall Panels: Horizontal deflection of 1/240 of the span.
    e. Design secondary-framing system to accommodate deflection of primary framing and construction tolerances, and to maintain clearances at openings.
    f. Lateral Drift: Maximum of 1/200 of the building height.

C. Seismic Performance: Metal building system shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.

D. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes by preventing buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

1. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.

E. Fire-Resistance Ratings: Where assemblies are indicated to have a fire-resistance rating, provide metal panel assemblies identical to those of assemblies tested for fire resistance per ASTM E119 or ASTM E108 by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

1. Indicate design designations from UL's "Fire Resistance Directory," FM Global's "Approval Guide," or from the listings of another qualified testing agency.

F. Fire Propagation Characteristics: Exterior wall assemblies containing foam plastics pass NFPA 285 fire test.

G. Fire-Rated Door Assemblies: Assemblies complying with NFPA 80 that are listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at positive pressure according to NFPA 252 or UL 10C.

1. Oversize Fire-Rated Door Assemblies: For units exceeding sizes of tested assemblies, provide certification by a qualified testing agency that doors comply with standard construction requirements for tested and labeled fire-rated door assemblies except for size.

H. Structural Performance for Metal Roof and Wall Panels: Provide metal panel systems capable of withstanding the effects of the following loads, based on testing according to ASTM E1592:

1. Wind Loads: As indicated on Drawings.

I. Air Infiltration for Metal Roof Panels: Air leakage of not more than 0.06 cfm/sq. ft. when tested according to ASTM E1680 at the following test-pressure difference:

1. Test-Pressure Difference: 1.57 lbf/sq. ft..

J. Air Infiltration for Metal Wall Panels: Air leakage of not more than 0.06 cfm/sq. ft. when tested according to ASTM E283 at the following test-pressure difference:

1. Test-Pressure Difference: 1.57 lbf/sq. ft..

K. Water Penetration for Metal Roof Panels: No water penetration when tested according to ASTM E1646at the following test-pressure difference:

1. Test-Pressure Difference: 6.24 lbf/sq. ft..

L. Water Penetration for Metal Wall Panels: No water penetration when tested according to ASTM E331 at the following test-pressure difference:

1. Test-Pressure Difference: 6.24 lbf/sq. ft..

M. Wind-Uplift Resistance: Provide metal roof panel assemblies that comply with UL 580 for wind-uplift-resistance class indicated.

1. Uplift Rating: UL 90.

N. FM Global Listing: Provide metal roof panels and component materials that comply with requirements in FM Global 4471 as part of a panel roofing system and that are listed in FM Global's "Approval Guide" for Class 1 or noncombustible construction, as applicable. Identify materials with FM Global markings.

1. Fire/Windstorm Classification: Class 1A-90.
2. Hail Resistance: SH.

O. Energy Star Listing: Roof panels that are listed on the DOE's ENERGY STAR "Roof Products Qualified Product List" for low-slope roof products.

P. Energy Performance: Provide roof panels according to one of the following when tested according to CRRC-1:

1. Three-year, aged, solar reflectance of not less than 0.55and emissivity of not less than 0.25.

2. Three-year, aged, Solar Reflectance Index of not less than **78**when calculated according to ASTM E1980.

Q. Thermal Performance for Opaque Elements: Provide the following maximum U-factors and minimum R-values when tested according to ASTM C1363 or ASTM C518:

1. Roof:
   a. R-Value: 53.8.

2. Walls:
   a. R-Value: 44.8.

2.4 STRUCTURAL-STEEL FRAMING

A. Structural Steel: Comply with AISC 360, "Specification for Structural Steel Buildings."

B. Bolted Connections: Comply with RCSC's "Specification for Structural Joints Using High-Strength Bolts."

C. Cold-Formed Steel: Comply with AISI's "North American Specification for the Design of Cold-Formed Steel Structural Members" for design requirements and allowable stresses.

D. Primary Framing: Manufacturer's standard primary-framing system, designed to withstand required loads and specified requirements. Primary framing includes transverse and lean-to frames; rafters, rake, and canopy beams; sidewall, intermediate, end-wall, and corner columns; and wind bracing.

1. General: Provide frames with attachment plates, bearing plates, and splice members. Factory drill for field-bolted assembly. Provide frame span and spacing indicated.

   a. Slight variations in span and spacing may be acceptable if necessary to comply with manufacturer's standard, as approved by Director’s Representative.

2. Rigid Clear-Span Frames: I-shaped frame sections fabricated from shop-welded, built-up steel plates or structural-steel shapes. Interior columns are not permitted.
3. Rigid Modular Frames: I-shaped frame sections fabricated from shop-welded, built-up steel plates or structural-steel shapes. Provide interior columns fabricated from round steel pipes or tubes, or shop-welded, built-up steel plates.
4. Truss-Frame, Clear-Span Frames: Rafter frames fabricated from joist girders, and I-shaped column sections fabricated from shop-welded, built-up steel plates or structural-steel shapes. Interior columns are not permitted.
5. Truss-Frame Modular Frames: Rafter frames fabricated from joist girders, and I-shaped column sections fabricated from shop-welded, built-up steel plates or structural-steel shapes. Provide interior columns fabricated from round steel pipes or tubes, or shop-welded, built-up steel plates.
6. Long-Bay Frames: I-shaped frame sections fabricated from shop-welded, built-up steel plates or structural-steel shapes. Provide interior columns fabricated from round steel pipes or tubes, or shop-welded, built-up steel plates.
7. Frame Configuration: One-directional, sloped.
8. Exterior Column: Tapered.

9. Rafter: Tapered.

E. End-Wall Framing: Manufacturer's standard primary end-wall framing fabricated for field-bolted assembly to comply with the following:

1. End-Wall and Corner Columns: I-shaped sections fabricated from structural-steel shapes; shop-welded, built-up steel plates; or C-shaped, cold-formed, structural-steel sheet.
2. End-Wall Rafters: C-shaped, cold-formed, structural-steel sheet; or I-shaped sections fabricated from shop-welded, built-up steel plates or structural-steel shapes.

F. Secondary Framing: Manufacturer's standard secondary framing, including purlins, girts, eave struts, flange bracing, base members, gable angles, clips, headers, jambs, and other miscellaneous structural members. Unless otherwise indicated, fabricate framing from either cold-formed, structural-steel sheet or roll-formed, metallic-coated steel sheet, prepainted with coil coating, to comply with the following:

1. Purlins: C- or Z-shaped sections; fabricated from built-up steel plates, steel sheet, or structural-steel shapes; minimum 2-1/2-inch- wide flanges.

    a. Depth: As indicated on Drawings and as needed to comply with system performance requirements.

2. Purlins: Steel joists of depths indicated on Drawings.
3. Girts: C- or Z-shaped sections; fabricated from built-up steel plates, steel sheet, or structural-steel shapes. Form ends of Z-sections with stiffening lips angled 40 to 50 degrees from flange, with minimum 2-1/2-inch- wide flanges.

    a. Depth: As indicated on Drawings and as required to comply with system performance requirements.

4. Eave Struts: Unequal-flange, C-shaped sections; fabricated from built-up steel plates, steel sheet, or structural-steel shapes; to provide adequate backup for metal panels.
5. Flange Bracing: Minimum 2-by-2-by-1/8-inch structural-steel angles or 1-inch- diameter, cold-formed structural tubing to stiffen primary-frame flanges.
6. Sag Bracing: Minimum 1-by-1-by-1/8-inch structural-steel angles.
7. Base or Sill Angles: Manufacturer's standard base angle, minimum 3-by-2-inch, fabricated from zinc-coated (galvanized) steel sheet.
8. Purlin and Girt Clips: Manufacturer's standard clips fabricated from steel sheet. Provide galvanized clips where clips are connected to galvanized framing members.
9. Framing for Openings: Channel shapes; fabricated from cold-formed, structural-steel sheet or structural-steel shapes. Frame head and jamb of door openings and head, jamb, and sill of other openings.
10. Miscellaneous Structural Members: Manufacturer's standard sections fabricated from cold-formed, structural-steel sheet; built-up steel plates; or zinc-coated (galvanized) steel sheet; designed to withstand required loads.

G. Canopy Framing: Manufacturer's standard structural-framing system, designed to withstand required loads; fabricated from shop-welded, built-up steel plates or structural-steel shapes. Provide frames with attachment plates and splice members, factory drilled for field-bolted assembly.

1. Type: Straight-beam, eave type.

H. Bracing: Provide adjustable wind bracing using any method as follows:

1. Rods: ASTM A36; ASTM A572, Grade 50; or ASTM A529, Grade 50; minimum 1/2-inch- diameter steel; threaded full length or threaded a minimum of 6 inches at each end.
2. Cable: ASTM A475, minimum 1/4-inch- diameter, extra-high-strength grade, Class B, zinc-coated, seven-strand steel; with threaded end anchors.
3. Angles: Fabricated from structural-steel shapes to match primary framing, of size required to withstand design loads.
4. Rigid Portal Frames: Fabricated from shop-welded, built-up steel plates or structural-steel shapes to match primary framing; of size required to withstand design loads.
5. Fixed-Base Columns: Fabricated from shop-welded, built-up steel plates or structural-steel shapes to match primary framing; of size required to withstand design loads.
6. Diaphragm Action of Metal Panels: Design metal building to resist wind forces through diaphragm action of metal panels.

I. Anchor Rods: Headed anchor rods as indicated in Anchor Rod Plan for attachment of metal building to foundation.

J. Materials:

1. W-Shapes: ASTM A992; ASTM A572, Grade 50 or 55; or ASTM A529, Grade 50 or 55.
2. Channels, Angles, M-Shapes, and S-Shapes: ASTM A36; ASTM A572, Grade 50 or 55; or ASTM A529, Grade 50 or 55.
3. Plate and Bar: ASTM A36; ASTM A572, Grade 50 or 55; or ASTM A529, Grade 50 or 55.
4. Steel Pipe: ASTM A53, Type E or S, Grade B.
5. Cold-Formed Hollow Structural Sections: ASTM A500, Grade B or C, structural tubing.
6. Structural-Steel Sheet: Hot-rolled, ASTM A1011, Structural Steel (SS), Grades 30 through 55, or High-Strength Low-Alloy Steel (HSLAS) or High-Strength Low-Alloy Steel with Improved Formability (HSLAS-F), Grades 45 through 70; or cold-rolled, ASTM A1008, Structural Steel (SS), Grades 25 through 80, or HSLAS, Grades 45 through 70.
7. Metallic-Coated Steel Sheet: ASTM A653, SS, Grades 33 through 80, or HSLAS or HSLAS-F, Grades 50 through 80; with G60 coating designation; mill phosphatized.
8. Metallic-Coated Steel Sheet Prepainted with Coil Coating: Steel sheet, metallic coated by the hot-dip process and prepainted by the coil-coating process to comply with ASTM A755.

    a. Zinc-Coated (Galvanized) Steel Sheet: ASTM A653, SS, Grades 33 through 80, or HSLAS or HSLAS-F, Grades 50 through 80; with G90 coating designation.
    b. Aluminum-Zinc Alloy-Coated Steel Sheet: ASTM A792, SS, Grade 50 or 80; with Class AZ50 coating.

9. Joist Girders: Manufactured according to "Standard Specifications for Joist Girders," in SJI's "Standard Specifications and Load Tables for Steel Joists and Joist Girders"; with steel-angle, top- and bottom-chord members, and end- and top-chord arrangements as indicated on Drawings and required for primary framing.

10. Steel Joists: Manufactured according to "Standard Specifications for Open Web Steel Joists, K-Series," in SJI's "Standard Specifications and Load Tables for Steel Joists and Joist Girders"; with steel-angle, top- and bottom-chord members, and end- and top-chord arrangements as indicated on Drawings and required for secondary framing.
11. Non-High-Strength Bolts, Nuts, and Washers: ASTM A307, Grade A, carbon-steel, hex-head bolts; ASTM A563 carbon-steel hex nuts; and ASTM F844 plain (flat) steel washers.

    a. Finish: Plain.

12. High-Strength Bolts, Nuts, and Washers: ASTM F3125,Grade A325, Type 1, heavy-hex steel structural bolts; ASTM A563, Grade DH, heavy-hex carbon-steel nuts; and ASTM F436, Type 1, hardened carbon-steel washers.

    a. Finish: Hot-dip zinc coating, ASTM F2329, Class C.

13. High-Strength Bolts, Nuts, and Washers: ASTM F3125, Grade A490, Type 1, heavy-hex steel structural bolts or Grade F2280 tension-control, bolt-nut-washer assemblies with splined ends; ASTM A563, Grade DH, heavy-hex carbon-steel nuts; and ASTM F436, Type 1, hardened carbon-steel washers; all with plain finish.
14. Tension-Control, High-Strength Bolt-Nut-Washer Assemblies: ASTM F3125, Grade F1852, Type 1, heavy-hex head assemblies consisting of steel structural bolts with splined ends; ASTM A563, Grade DH, heavy-hex carbon-steel nuts; and ASTM F436, Type 1 hardened carbon-steel washers.

    a. Finish: Mechanically deposited zinc coating, ASTM B695, Class 50.

15. Headed Anchor Rods: ASTM F1554, Grade 36.

    a. Configuration: Straight.
    b. Nuts: ASTM A563 heavy-hex carbon steel.
    c. Plate Washers: ASTM A36 carbon steel.
    d. Washers: ASTM F436 hardened carbon steel.
    e. Finish: Hot-dip zinc coating, ASTM F2329, Class C.

16. Threaded Rods: ASTM A307, Grade A.

    a. Nuts: ASTM A563 heavy-hex carbon steel.
    b. Washers: ASTM F436 hardened carbon steel.
    c. Finish: Plain.

K. Finish: Factory primed. Apply specified primer immediately after cleaning and pretreating.

1. Clean and prepare in accordance with SSPC-SP2.
2. Coat with manufacturer's standard primer. Apply primer to primary and secondary framing to a minimum dry film thickness of 1 mil.

    a. Prime secondary framing formed from uncoated steel sheet to a minimum dry film thickness of 0.5 mil on each side.

2.5 INSULATED METAL ROOF PANELS.

A. Concealed-Fastener, Foamed-Insulation-Core Metal Wall Panels: Formed with tongue-and-groove panel edges; designed for sequential installation by interlocking panel edges and mechanically attaching panels to supports using concealed clips or fasteners.

1. Panel Thermal-Resistance Value (R-Value): 32.
2. Facing Material: Fabricate panel with exterior and interior facings of same material and thickness. Zinc-coated (galvanized) or aluminum-zinc alloy-coated steel sheet, 0.030-inch nominal uncoated steel thickness. Prepainted by the coil-coating process to comply with ASTM A755.

    a. Exterior Surface: Shallow ribs.
    b. Exterior Finish: Three-coat fluoropolymer
    c. Color: As selected by Director’s Representative from manufacturer's full range

3. Panel Coverage: 36 inches nominal.
4. Panel Thickness: 6 inches.
5. Insulation Core: Modified polyisocyanurate or polyurethane foam using a non-CFC blowing agent, foamed-in-place or board type, with maximum flame-spread and smoke-developed indexes of 25 and 450, respectively.

    a. Closed-Cell Content: 90 percent when tested according to ASTM D6226.
    b. Density: 2.0 to 2.6 lb/cu. ft. when tested according to ASTM D1622.
    c. Compressive Strength: Minimum 20 psi when tested according to ASTM D1621.
    d. Shear Strength: 26 psi when tested according to ASTM C273.

6. Fire-Test-Response Characteristics: Class A according to ASTM E108.
7. Surface-Burning Characteristics: Flame-spread index of 25 or less and a smoke-developed index of 450 or less, per ASTM E84.

B. Finishes:

1. Exposed Coil-Coated Finish:
    a. Three-Coat Fluoropolymer: AAMA 621. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in both color coat and clear topcoat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

2. Concealed Finish: Apply pretreatment and manufacturer's standard white or light-colored acrylic or polyester backer finish, consisting of prime coat and wash coat with a minimum total dry film thickness of 0.5 mil.

C. Basis of Design:

1. Metl Span by Nucor – LS36 Insulated Metal Roof and Wall Panels

2.6 INSULATED METAL WALL PANELS.

A. Concealed-Fastener, Foamed-Insulation-Core Metal Wall Panels: Formed with tongue-and-groove panel edges; designed for sequential installation by interlocking panel edges and mechanically attaching panels to supports using concealed clips or fasteners.

1. Panel Thermal-Resistance Value (R-Value): 24.
2. Facing Material: Fabricate panel with exterior and interior facings of same material and thickness. Zinc-coated (galvanized) or aluminum-zinc alloy-coated steel sheet, 0.030-inch nominal uncoated steel thickness. Prepainted by the coil-coating process to comply with ASTM A755.

    a. Exterior Surface: Shallow ribs.
    b. Exterior Finish: Three-coat fluoropolymer]
    c. Color: As selected by Director’s Representative from manufacturer's full range

3. Panel Coverage: 36 inches nominal.
4. Panel Thickness: 5 inches.
5. Insulation Core: Modified polyisocyanurate or polyurethane foam using a non-CFC blowing agent, foamed-in-place or board type, with maximum flame-spread and smoke-developed indexes of 25 and 450, respectively.

    a. Closed-Cell Content: 90 percent when tested according to ASTM D6226.
    b. Density: 2.0 to 2.6 lb/cu. ft. when tested according to ASTM D1622.
    c. Compressive Strength: Minimum 20 psi when tested according to ASTM D1621.
    d. Shear Strength: 26 psi when tested according to ASTM C273.

6. Fire-Test-Response Characteristics: Class A according to ASTM E108.
7. Surface-Burning Characteristics: Flame-spread index of 25 or less and a smoke-developed index of 450 or less, per ASTM E84.

B. Finishes:

1. Exposed Coil-Coated Finish:
    a. Three-Coat Fluoropolymer: AAMA 621. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in both color coat and clear topcoat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

2. Concealed Finish: Apply pretreatment and manufacturer's standard white or light-colored acrylic or polyester backer finish, consisting of prime coat and wash coat with a minimum total dry film thickness of 0.5 mil.

C. Basis of Design:

1. Metl Span by Nucor – LS36 Insulated Metal Roof and Wall Panels

2.7 ACCESSORIES

A. General: Provide accessories as standard with metal building system manufacturer and as specified. Fabricate and finish accessories at the factory to greatest extent possible, by manufacturer's standard procedures and processes. Comply with indicated profiles and with dimensional and structural requirements.

1. Form exposed sheet metal accessories that are without excessive oil-canning, buckling, and tool marks and that are true to line and levels indicated, with exposed edges folded back to form hems.

B. Roof Panel Accessories: Provide components required for a complete metal roof panel assembly including copings, fasciae, corner units, ridge closures, clips, sealants, gaskets, fillers, closure strips, and similar items. Match material and finish of metal roof panels unless otherwise indicated.

1. Closures: Provide closures at eaves and ridges, fabricated of same material as metal roof panels.
2. Clips: Manufacturer's standard, formed from stainless-steel sheet, designed to withstand negative-load requirements.
3. Cleats: Manufacturer's standard, mechanically seamed cleats formed from stainless-steel sheet or nylon-coated aluminum sheet.
4. Backing Plates: Provide metal backing plates at panel end splices, fabricated from material recommended by manufacturer.
5. Closure Strips: Closed-cell, expanded, cellular, rubber or crosslinked, polyolefin-foam or closed-cell laminated polyethylene; minimum 1-inch- thick, flexible closure strips; cut or premolded to match metal roof panel profile. Provide closure strips where indicated or necessary to ensure weathertight construction.
6. Thermal Spacer Blocks: Where metal panels attach directly to purlins, provide thermal spacer blocks of thickness required to provide 1-inch standoff; fabricated from extruded polystyrene.

C. Wall Panel Accessories: Provide components required for a complete metal wall panel assembly including copings, fasciae, mullions, sills, corner units, clips, sealants, gaskets, fillers, closure strips, and similar items. Match material and finish of metal wall panels unless otherwise indicated.

1. Closures: Provide closures at eaves and rakes, fabricated of same material as metal wall panels.
2. Backing Plates: Provide metal backing plates at panel end splices, fabricated from material recommended by manufacturer.
3. Closure Strips: Closed-cell, expanded, cellular, rubber or crosslinked, polyolefin-foam or closed-cell laminated polyethylene; minimum 1-inch- thick, flexible closure strips; cut or premolded to match metal wall panel profile. Provide closure strips where indicated or necessary to ensure weathertight construction.

D. Flashing and Trim: Zinc-coated (galvanized) or aluminum-zinc alloy-coated steel sheet, 0.018-inch nominal uncoated steel thickness, prepainted with coil coating; finished to match adjacent metal panels.

1. Provide flashing and trim as required to seal against weather and to provide finished appearance. Locations include, but are not limited to, eaves, rakes, corners, bases, framed openings, ridges, fasciae, and fillers.
2. Opening Trim: Zinc-coated (galvanized) or aluminum-zinc alloy-coated steel sheet, 0.030-inchnominal uncoated steel thickness, prepainted with coil coating. Trim head and jamb of door openings, and head, jamb, and sill of other openings.

E. Gutters: Zinc-coated (galvanized) or aluminum-zinc alloy-coated steel sheet, 0.018-inch nominal uncoated steel thickness, prepainted with coil coating; finished to match roof fascia and rake trim. Match profile of gable trim, complete with end pieces, outlet tubes, and other special pieces as required. Fabricate in minimum 96-inch- long sections, sized according to SMACNA's "Architectural Sheet Metal Manual."

1. Gutter Supports: Fabricated from same material and finish as gutters.
2. Strainers: Bronze, copper, or aluminum wire ball type at outlets.

F. Downspouts: Zinc-coated (galvanized) or aluminum-zinc alloy-coated steel sheet, 0.018-inch nominal uncoated steel thickness, prepainted with coil coating; finished to match metal wall panels. Fabricate in minimum 10-foot- long sections, complete with formed elbows and offsets.

1. Mounting Straps: Fabricated from same material and finish as gutters.

G. Pipe Flashing: Premolded, EPDM pipe collar with flexible aluminum ring bonded to base.

H. Materials:

1. Fasteners: Self-tapping screws, bolts, nuts, self-locking rivets and bolts, end-welded studs, and other suitable fasteners designed to withstand design loads. Provide fasteners with heads matching color of materials being fastened by means of plastic caps or factory-applied coating.

    a. Fasteners for Metal Roof Panels: Self-drilling or self-tapping, zinc-plated, hex-head carbon-steel screws, with a stainless-steel cap or zinc-aluminum-alloy head and EPDM sealing washer.
    b. Fasteners for Metal Wall Panels: Self-drilling or self-tapping, zinc-plated, hex-head carbon-steel screws**,** with EPDM sealing washers bearing on weather side of metal panels.
    c. Fasteners for Flashing and Trim: Blind fasteners or self-drilling screws with hex washer head.
    d. Blind Fasteners: High-strength aluminum or stainless-steel rivets.

2. Corrosion-Resistant Coating: Cold-applied asphalt mastic, compounded for 15-mil dry film thickness per coat. Provide inert-type noncorrosive compound free of asbestos fibers, sulfur components, and other deleterious impurities.
3. Nonmetallic, Shrinkage-Resistant Grout: ASTM C1107, factory-packaged, nonmetallic aggregate grout, noncorrosive, nonstaining, mixed with water to consistency suitable for application and a 30-minute working time.

4. Metal Panel Sealants:

    a. Sealant Tape: Pressure-sensitive, 100 percent solids, gray polyisobutylene-compound sealant tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape of manufacturer's standard size.
    b. Joint Sealant: ASTM C920; one part elastomeric polyurethane or polysulfide; of type, grade, class, and use classifications required to seal joints in metal panels and remain weathertight; and as recommended by metal building system manufacturer.

2.8 FABRICATION

A. General: Design components and field connections required for erection to permit easy assembly.

1. Mark each piece and part of the assembly to correspond with previously prepared erection drawings, diagrams, and instruction manuals.
2. Fabricate structural framing to produce clean, smooth cuts and bends. Punch holes of proper size, shape, and location. Members shall be free of cracks, tears, and ruptures.

B. Tolerances: Comply with MBMA's "Metal Building Systems Manual" for fabrication and erection tolerances.

C. Primary Framing: Shop fabricate framing components to indicated size and section, with baseplates, bearing plates, stiffeners, and other items required for erection welded into place. Cut, form, punch, drill, and weld framing for bolted field assembly.

1. Make shop connections by welding or by using high-strength bolts.
2. Join flanges to webs of built-up members by a continuous, submerged arc-welding process.
3. Brace compression flange of primary framing with steel angles or cold-formed structural tubing between frame web and purlin web or girt web, so flange compressive strength is within allowable limits for any combination of loadings.
4. Weld clips to frames for attaching secondary framing if applicable, or punch for bolts.
5. Shop Priming: Prepare surfaces for shop priming according to SSPC-SP 2. Shop prime primary framing with specified primer after fabrication.

D. Secondary Framing: Shop fabricate framing components to indicated size and section by roll forming or break forming, with baseplates, bearing plates, stiffeners, and other plates required for erection welded into place. Cut, form, punch, drill, and weld secondary framing for bolted field connections to primary framing.

1. Make shop connections by welding or by using non-high-strength bolts.
2. Shop Priming: Prepare uncoated surfaces for shop priming according to SSPC-SP 2. Shop prime uncoated secondary framing with specified primer after fabrication.

E. Metal Panels: Fabricate and finish metal panels at the factory to greatest extent possible, by manufacturer's standard procedures and processes, as necessary to fulfill indicated performance requirements. Comply with indicated profiles and with dimensional and structural requirements.

1. Provide panel profile, including major ribs and intermediate stiffening ribs, if any, for full length of metal panel.

2.9 SOURCE QUALITY CONTROL

A. Special Inspection: Director's Representative will engage a qualified special inspector to perform source quality control inspections and to submit reports.

1. Accredited Manufacturers: Special inspections will not be required if fabrication is performed by an IAS AC472-accredited manufacturer approved by authorities having jurisdiction to perform such Work without special inspection.

a. After fabrication, submit copy of certificate of compliance to authorities having jurisdiction, certifying that Work was performed according to Contract requirements.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with erector present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Before erection proceeds, survey elevations and locations of concrete- and masonry-bearing surfaces and locations of anchor rods, bearing plates, and other embedments to receive structural framing, with erector present, for compliance with requirements and metal building system manufacturer's tolerances.

1. Engage Land Surveyor to perform surveying.

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

3.2 PREPARATION

A. Clean and prepare surfaces to be painted according to manufacturer's written instructions for each particular substrate condition.

B. Provide temporary shores, guys, braces, and other supports during erection to keep structural framing secure, plumb, and in alignment against temporary construction loads and loads equal in intensity to design loads. Remove temporary supports when permanent structural framing, connections, and bracing are in place unless otherwise indicated.

3.3 ERECTION OF STRUCTURAL FRAMING

A. Erect metal building system according to manufacturer's written instructions and drawings.

B. Do not field cut, drill, or alter structural members without written approval from metal building system manufacturer's professional engineer.

C. Set structural framing accurately in locations and to elevations indicated, according to AISC specifications referenced in this Section. Maintain structural stability of frame during erection.

D. Base and Bearing Plates: Clean concrete- and masonry-bearing surfaces of bond-reducing materials, and roughen surfaces prior to setting plates. Clean bottom surface of plates.

1. Set plates for structural members on wedges, shims, or setting nuts as required.
2. Tighten anchor rods after supported members have been positioned and plumbed. Do not remove wedges or shims but, if protruding, cut off flush with edge of plate before packing with grout.
3. Promptly pack grout solidly between bearing surfaces and plates so no voids remain. Neatly finish exposed surfaces; protect grout and allow to cure. Comply with manufacturer's written installation instructions for shrinkage-resistant grouts.

E. Align and adjust structural framing before permanently fastening. Before assembly, clean bearing surfaces and other surfaces that will be in permanent contact with framing. Perform necessary adjustments to compensate for discrepancies in elevations and alignment.

1. Level and plumb individual members of structure.
2. Make allowances for difference between temperature at time of erection and mean temperature when structure will be completed and in service.

F. Primary Framing and End Walls: Erect framing level, plumb, rigid, secure, and true to line. Level baseplates to a true even plane with full bearing to supporting structures, set with double-nutted anchor bolts. Use grout to obtain uniform bearing and to maintain a level base-line elevation. Moist-cure grout for not less than seven days after placement.

1. Make field connections using high-strength bolts installed according to RCSC's "Specification for Structural Joints Using High-Strength Bolts" for bolt type and joint type specified.

    a. Joint Type: Snug tightened or pretensioned as required by manufacturer.

G. Secondary Framing: Erect framing level, plumb, rigid, secure, and true to line. Field bolt secondary framing to clips attached to primary framing.

1. Provide rake or gable purlins with tight-fitting closure channels and fasciae.
2. Locate and space wall girts to suit openings such as doors and windows.
3. Provide supplemental framing at entire perimeter of openings, including doors, windows, louvers, ventilators, and other penetrations of roof and walls.

H. Steel Joists and Joist Girders: Install joists, girders, and accessories plumb, square, and true to line; securely fasten to supporting construction according to SJI's "Standard Specifications and Load Tables for Steel Joists and Joist Girders," joist manufacturer's written instructions, and requirements in this Section.

1. Before installation, splice joists delivered to Project site in more than one piece.
2. Space, adjust, and align joists accurately in location before permanently fastening.
3. Install temporary bracing and erection bridging, connections, and anchors to ensure that joists are stabilized during construction.

4. Joist Installation: Bolt joists to supporting steel framework using carbon-steel bolts unless otherwise indicated.
5. Joist Installation: Bolt joists to supporting steel framework using high-strength structural bolts unless otherwise indicated. Comply with RCSC's "Specification for Structural Joints Using High-Strength Bolts" for high-strength structural bolt installation and tightening requirements.
6. Joist Installation: Weld joist seats to supporting steel framework.
7. Install and connect bridging concurrently with joist erection, before construction loads are applied. Anchor ends of bridging lines at top and bottom chords if terminating at walls or beams.

I. Bracing: Install bracing in roof and sidewalls where indicated on erection drawings.

1. Tighten rod and cable bracing to avoid sag.
2. Locate interior end-bay bracing only where indicated.

J. Framing for Openings: Provide shapes of proper design and size to reinforce openings and to carry loads and vibrations imposed, including equipment furnished under mechanical and electrical work. Securely attach to structural framing.

K. Erection Tolerances: Maintain erection tolerances of structural framing within AISC 303.

3.4 INSULATED METAL WALL PANEL INSTALLATION, GENERAL

A. Fabricate and finish metal panels and accessories at the factory, by manufacturer's standard procedures and processes, as necessary to fulfill indicated performance requirements demonstrated by laboratory testing. Comply with indicated profiles and with dimensional and structural requirements.

B. On-Site Fabrication: Subject to compliance with requirements of this Section, metal panels may be fabricated on-site using UL-certified, portable roll-forming equipment if panels are of same profile and warranted by manufacturer to be equal to factory-formed panels. Fabricate according to equipment manufacturer's written instructions and to comply with details shown.

C. Examination: Examine primary and secondary framing to verify that structural-panel support members and anchorages have been installed within alignment tolerances required by manufacturer.

1. Examine roughing-in for components and systems penetrating metal panels, to verify actual locations of penetrations relative to seams before metal panel installation.

D. General: Anchor metal panels and other components of the Work securely in place, with provisions for thermal and structural movement.

1. Field cut metal panels as required for doors, windows, and other openings. Cut openings as small as possible, neatly to size required, and without damage to adjacent metal panel finishes.

a. Field cutting of metal panels by torch is not permitted unless approved in writing by manufacturer.

2. Install metal panels perpendicular to structural supports unless otherwise indicated.
3. Flash and seal metal panels with weather closures at perimeter of openings and similar elements. Fasten with self-tapping screws.
4. Locate and space fastenings in uniform vertical and horizontal alignment.
5. Locate metal panel splices over structural supports with end laps in alignment.
6. Lap metal flashing over metal panels to allow moisture to run over and off the material.

E. Lap-Seam Metal Panels: Install screw fasteners using power tools with controlled torque adjusted to compress EPDM washers tightly without damage to washers, screw threads, or metal panels. Install screws in predrilled holes.

1. Arrange and nest side-lap joints so prevailing winds blow over, not into, lapped joints. Lap ribbed or fluted sheets one full rib corrugation. Apply metal panels and associated items for neat and weathertight enclosure. Avoid "panel creep" or application not true to line.

F. Metal Protection: Where dissimilar metals contact each other or corrosive substrates, protect against galvanic action by painting contact surfaces with corrosion-resistant coating, by applying rubberized-asphalt underlayment to each contact surface, or by other permanent separation as recommended by metal roof panel manufacturer.

G. Joint Sealers: Install gaskets, joint fillers, and sealants where indicated and where required for weatherproof performance of metal panel assemblies. Provide types of gaskets, fillers, and sealants indicated; or, if not indicated, provide types recommended by metal panel manufacturer.

1. Seal metal panel end laps with double beads of tape or sealant the full width of panel. Seal side joints where recommended by metal panel manufacturer.
2. Prepare joints and apply sealants to comply with requirements in Section 079200 "Joint Sealants."

3.5 INSULATED METAL ROOF PANEL INSTALLATION

A. General: Provide metal roof panels of full length from eave to ridge unless otherwise indicated or restricted by shipping limitations.

1. .
2. Flash and seal metal roof panels with weather closures at eaves and rakes. Fasten with self-tapping screws.

B. Lap-Seam Metal Roof Panels: Fasten metal roof panels to supports with exposed fasteners at each lapped joint, at location and spacing recommended by manufacturer.

1. Provide metal-backed sealing washers under heads of exposed fasteners bearing on weather side of metal roof panels.
2. Provide sealant tape at lapped joints of metal roof panels and between panels and protruding equipment, vents, and accessories.
3. Apply a continuous ribbon of sealant tape to weather-side surface of fastenings on end laps and on side laps of nesting-type metal panels, on side laps of ribbed or fluted metal panels, and elsewhere as needed to make metal panels weatherproof to driving rains.
4. At metal panel splices, nest panels with minimum 6-inch end lap, sealed with butyl-rubber sealant and fastened together by interlocking clamping plates.

C. Metal Fascia Panels: Align bottom of metal panels and fasten with blind rivets, bolts, or self-drilling or self-tapping screws. Flash and seal metal panels with weather closures where fasciae meet soffits, along lower panel edges, and at perimeter of all openings.

D. Metal Roof Panel Installation Tolerances: Shim and align metal roof panels within installed tolerance of 1/4 inch in 20 feet on slope and location lines and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.

3.6 ACCESSORY INSTALLATION

A. General: Install accessories with positive anchorage to building and weathertight mounting, and provide for thermal expansion. Coordinate installation with flashings and other components.

1. Install components required for a complete metal roof panel assembly, including trim, copings, ridge closures, seam covers, flashings, sealants, gaskets, fillers, closure strips, and similar items.
2. Install components for a complete metal wall panel assembly, including trim, copings, corners, seam covers, flashings, sealants, gaskets, fillers, closure strips, and similar items.
3. Where dissimilar metals contact each other or corrosive substrates, protect against galvanic action by painting contact surfaces with corrosion-resistant coating, by applying rubberized-asphalt underlayment to each contact surface, or by other permanent separation as recommended by manufacturer.

B. Flashing and Trim: Comply with performance requirements, manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible, and set units true to line and level. Install work with laps, joints, and seams that will be permanently watertight and weather resistant.

1. Install exposed flashing and trim that is without excessive oil-canning, buckling, and tool marks and that is true to line and levels indicated, with exposed edges folded back to form hems. Install sheet metal flashing and trim to fit substrates and to result in waterproof and weather-resistant performance.
2. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10 feet with no joints allowed within 24 inches of corner or intersection. Where lapped or bayonet-type expansion provisions cannot be used or would not be sufficiently weather resistant and waterproof, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with mastic sealant (concealed within joints).

C. Gutters: Join sections with riveted-and-soldered or lapped-and-sealed joints. Attach gutters to eave with gutter hangers spaced as required for gutter size, but not more than 36 inches o.c. using manufacturer's standard fasteners. Provide end closures and seal watertight with sealant. Provide for thermal expansion.

D. Downspouts: Join sections with 1-1/2-inch telescoping joints. Provide fasteners designed to hold downspouts securely 1 inch away from walls; locate fasteners at top and bottom and at approximately 60 inches o.c. in between.

1. Provide elbows at base of downspouts to direct water away from building.
2. Tie downspouts to underground drainage system indicated.

E. Circular Roof Ventilators: Set ventilators complete with necessary hardware, anchors, dampers, weather guards, rain caps, and equipment supports. Mount ventilators on flat level base. Install preformed filler strips at base to seal ventilator to metal roof panels.

F. Continuous Roof Ventilators: Set ventilators complete with necessary hardware, anchors, dampers, weather guards, rain caps, and equipment supports. Join sections with splice plates and end-cap skirt assemblies where required to achieve indicated length. Install preformed filler strips at base to seal ventilator to metal roof panels.

G. Louvers: Locate and place louver units level, plumb, and at indicated alignment with adjacent work.

1. Use concealed anchorages where possible. Provide brass or lead washers fitted to screws where required to protect metal surfaces and to make a weathertight connection.
2. Provide perimeter reveals and openings of uniform width for sealants and joint fillers.
3. Protect galvanized- and nonferrous-metal surfaces from corrosion or galvanic action by applying a heavy coating of corrosion-resistant paint on surfaces that will be in contact with concrete, masonry, or dissimilar metals.
4. Install concealed gaskets, flashings, joint fillers, and insulation as louver installation progresses, where weathertight louver joints are required. Comply with Section 079200 "Joint Sealants" for sealants applied during louver installation.

H. Roof Curbs: Install curbs at locations indicated on Drawings. Install flashing around bases where they meet metal roof panels.

I. Pipe Flashing: Form flashing around pipe penetration and metal roof panels. Fasten and seal to panel as recommended by manufacturer.

3.7 FIELD QUALITY CONTROL

A. Special Inspections: Director’s Representative will engage a qualified special inspector to perform field quality control special inspections and to submit reports.

B. Product will be considered defective if it does not pass tests and inspections.

C. Prepare test and inspection reports.

3.8 CLEANING AND PROTECTION

A. Repair damaged galvanized coatings on galvanized items with galvanized repair paint according to ASTM A780 and manufacturer's written instructions.

B. Remove and replace glass that has been broken, chipped, cracked, abraded, or damaged during construction period.

C. Touchup Painting: After erection, promptly clean, prepare, and prime or reprime field connections, rust spots, and abraded surfaces of prime-painted structural framing, bearing plates, and accessories.

1. Clean and prepare surfaces by SSPC-SP 2, "Hand Tool Cleaning," or by SSPC-SP 3, "Power Tool Cleaning."
2. Apply a compatible primer of same type as shop primer used on adjacent surfaces.

D. Touchup Painting: Cleaning and touchup painting are specified in Section 099114 "Exterior Painting" and Section 099123 "Interior Painting."

E. Metal Panels: Remove temporary protective coverings and strippable films, if any, as metal panels are installed. On completion of metal panel installation, clean finished surfaces as recommended by metal panel manufacturer. Maintain in a clean condition during construction.

1. Replace metal panels that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION 133419

SECTION 310000 - EARTHWORK

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. Site Clearing:

a. Protecting existing vegetation to remain.
b. Removing existing vegetation.
c. Clearing and grubbing.
d. Stripping and stockpiling topsoil and rock.
e. Removing above- and below-grade improvements.
f. Disconnecting, capping or sealing, and removing or abandoning site utilities in place.

2. Excavation:

a. Excavating for buildings and structures.
b. Excavating trenches for utilities and pits for buried utility structures.

3. Fill and Backfill:

a. Backfilling for building and site structures to subgrade elevations.
b. Backfilling for trenches.
c. Fill under slabs-on-grade.
d. Fill under pavements.
e. Fill for over-excavation.
f. Subsurface drainage backfill for walls and trenches.

4. Preparation of subgrades.
5. Compaction.
6. Rough and final grading.

B. Related Requirements:

1. Section 310001 – Earthwork Materials.
2. Section 312500 – Erosion and Sedimentation Controls.
3. Section 315000 – Excavation Support Protection.

1.3 REFERENCE STANDARDS

A. ASTM International:

1. ASTM C88 - Standard Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate
2. ASTM C136 - Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.
3. ASTM D698 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft^3).
4. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft^3).
5. ASTM D2419 – Standard Test Method for Sand Equivalent Value of Soils and Fine Aggregate.
6. ASTM D2434 - Standard Test Method for Permeability of Granular Soils (Constant Head).
7. ASTM D2487 – Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System).
8. ASTM D2974 – Standard Test Methods for Determining the Water (moisture) Content, Ash Content, and Organic Material of Peat and Other Organic Soils.
9. ASTM D4318 - Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.
10. ASTM D4373 - Standard Test Method for Rapid Determination of Carbonate Content of Soils
11. ASTM D4873 – Standard Guide for Identification, Storage, and Handling of Geosynthetic Rolls and Samples.
12. ASTM D6938 - Standard Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth).

B. Related Requirements:

1. Local utility standards when working in close proximity to utility lines.
2. Occupational Safety and Health Administration: Comply with the applicable requirements of the Code of Federal Regulations Title 29 – Labor, Part 1926 Safety and Health Regulations for Construction (OSHA).

C. New York State Department of Transportation (NYS DOT)

1. NYS DOT 620 - Bank and Channel Protection
2. NYS DOT 703 - Aggregates
3. NYS DOT 733 - Earthwork Materials

1.4 DEFINITIONS

A. Surface Soil: Soil that is present at the top layer of the existing soil profile.

B. Subsurface: Soil beneath the level of subgrade; soil beneath the topsoil layers of a naturally occurring soil profile.

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. Its appearance is generally friable, pervious,

and black or a darker shade of brown, gray, or red than underlying subsurface; reasonably free of subsurface soils, clay lumps, gravel, weeds, roots, toxic materials, or other non-soil materials.

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

E. 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.

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

G. Suitable Material (Fill and Backfill for Landscaped Areas): Material generally consisting of mineral soil (inorganic), blasted or broken rock and similar materials of natural or man-made origin, including mixtures thereof. Maximum particle size will not exceed 2/3 of the specified layer thickness prior to compaction. Topsoil and organic silt may be used as suitable material in landscaped areas provided it is placed as the surface soil.

H. Unsuitable Material: Material containing cinders, industrial waste, sludge, building/construction rubble, land fill, muck, and peat.

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

J. Subbase Course: Aggregate layer placed between the subgrade and asphaltic or concrete pavement section or concrete structure.

K. Bedding Course (Cushion Material): Aggregate layer placed over the excavated subgrade in a trench before laying pipe.

L. Drainage Material: Aggregate layer with minimal material passing the #200 sieve to promote downward water flow and minimizes upward capillary flow of pore water.

M. Classified Earth Excavation: Removal of all surface and subsurface material not classified as rock, to the lines and dimensions indicated.

N. Rock: Limestone, sandstone, shale, granite and similar material in solid beds or masses in its original or stratified position which can be removed only by blasting operations, drilling, wedging, or use of pneumatic tools, and boulders with a volume greater than 1.0 cu yd. Concrete building foundations and concrete slabs, not indicated, with a volume greater than 1.0 cu yd shall be classified as rock.

1. Limestone, sandstone, shale, granite, and similar material in a broken or weathered condition which can be removed with an excavator or backhoe equipped with a bucket with ripping teeth or any other style bucket shall be classified as earth excavation.
2. Masonry building foundations, whether indicated or not, shall be classified as earth excavation.

O. Unclassified Earth Excavation: Removal of all surface and subsurface material, of any description, necessary to perform the work of this contract. This will include:

1. All soil deposits of any description both above and below groundwater levels. These may be naturally deposited or placed by previous construction operations.
2. Ledge rock of all quality. (Limestone, Sandstone, Shale, Granite and similar materials in solid beds or masses in its original or stratified position which can only be removed by drilling, wedging, use of pneumatic tools or heavy ripping equipment). Blasting operations will not be permitted to loosen any ledge rock necessary to be removed in this contract.
3. Boulders of any size.
4. Any materials of man-made origin.

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

Q. Bulk Excavation: Excavation more than 10 feet in width and more than 30 feet in length.

R. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions without direction by Director's Representative. Unauthorized excavation, as well as remedial work directed by Director's Representative, shall be without additional compensation.

S. 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.

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

U. Plant-Protection Zone: Area surrounding individual trees, groups of trees, shrubs, or other vegetation to be protected during construction.

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

W. Landscaped Areas: Areas not covered by structures, walks, roads, paving, or parking.

X. Grading Limit Line (Shown on Drawings): Limits of grading, excavations and filling required for the Work. Unless specifically noted otherwise, the Grading Limit Line and Contract Limit Line shall be considered the same.

1.5 MATERIAL OWNERSHIP

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

1.6 SUBMITTALS

A. Submittals for this Section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Manufacturer's installation instructions shall be provided along with product data.

C. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).

D. Existing Conditions: Submit documentation before earthwork activities begin of existing trees and plantings, adjoining construction, and site improvements that establishes preconstruction conditions that might be misconstrued as damage caused by the Work of this Section.

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.

E. Qualification Data: For qualified testing agency.

1.7 QUALITY ASSURANCE

A. Geotechnical Testing Agency Qualifications: Qualified according to ASTM E329 and ASTM D3740 for testing indicated.

1.8 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 Director’s Representative and authorities having jurisdiction.
2. Provide alternate routes around closed or obstructed traffic ways if required by Director’s Representative or authorities having jurisdiction.

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

1. Do not proceed with work on adjoining property until directed by Director’s Representative.

C. Utility Locator Service: Locate underground utilities, in accordance with Section 023313 – Underground Utility Locator Service, before beginning site clearing or earth-moving operations.

D. Do not commence operations until temporary site fencing and erosion and sedimentation control measures are in place.

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

PART 2 - PRODUCTS

2.1 MATERIALS

A. See Section 310001 - Earthwork Materials.

PART 3 - EXECUTION

3.1 PREPARATION

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

B. Protect existing site features, to remain, from damage during construction. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.

1. Restore damaged improvements to their original condition, as acceptable to the Director's Representative.

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

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

3.2 TEMPORARY EROSION AND SEDIMENTATION CONTROL

A. Provide and maintain 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, in accordance with Section 312500 Erosion & Sedimentation Controls, the Contract Drawings, and requirements of authorities having jurisdiction. If the erosion and sedimentation controls specified by the authorities having jurisdiction are more stringent than those specified in the Contract Documents, contact the Director's Representative.

1. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross protection zones.
2. Inspect, maintain, and repair erosion and sedimentation control measures during construction until permanent vegetation has been established.
3. Remove erosion and sedimentation controls, and restore and stabilize areas disturbed during removal.

3.3 EXISTING UTILITIES

A. Locate, identify, disconnect, and seal or cap utilities indicated to be removed or abandoned in place.

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

B. Interrupting Existing Utilities: Do not interrupt utilities serving occupied facilities unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:

1. Notify Director's Representative not less than seven days in advance of proposed utility interruptions.

2. Do not proceed with utility interruptions without the Director's Representative's written permission.

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

3.4 STORAGE OF SOIL MATERIALS

A. Stockpile borrow soil materials and excavated suitable materials away from the edge of excavations and without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust and erosion by water.

1. Limit height of soil stockpiles to 180 inches.
2. Do not stockpile soil material within protection zones.
3. Dispose of surplus soils. Surplus soil is that which exceeds quantity indicated to be stockpiled or reused.

3.5 STOCKPILING ROCK

A. Remove from construction area naturally formed boulders that measure more than 1 foot across in least dimension. Do not include excavated or crushed rock.

1. Separate or wash off non-rock materials from rocks, including soil, clay lumps, gravel, and other objects larger than 2 inches in diameter; trash, debris, weeds, roots, and other waste materials.

B. Stockpile rock away from edge of excavations without intermixing with other materials. Cover to prevent windblown debris from accumulating among rocks.

1. Limit height of rock stockpiles to 240 inches.
2. Do not stockpile rock within protection zones.
3. Stockpile surplus rock to allow for later use.
4. Dispose of surplus rock. Surplus rock is that which exceeds quantity indicated to be stockpiled or reused.

3.6 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 rain or water accumulation that can cause softening, undermining/undercutting, washout, damage, and other soil changes that would be detrimental to the stability of subgrades.

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.

3.7 SHEETING, SHORING, AND BRACING

A. Temporary Sheeting: Install temporary sheeting, shoring and bracing as required to create a safe working environment and prevent settlement or other damage to adjacent grounds and structures resulting from excavation operations. Shore and brace sheeting in a manner which will not interfere with progress of other Work or related contracts (if any) on this project. Check shoring and bracing for settlement and adjust for settlement. Promptly remove temporary sheeting, shoring, and bracing when no longer required.

3.8 EXCAVATION, GENERAL

A. Unclassified Earth Excavation: Excavate to subgrade elevations regardless of the character of surface and subsurface conditions encountered. 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 unsuitable materials and rock, replace with suitable materials.

B. Classified Earth 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. The Contract Sum will be adjusted for rock excavation according to Contract provisions for changes in the Work. 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.

3.9 EXCAVATION

A. Excavation for Structures: 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.

B. Excavations for Footings and Foundations:

1. Do not disturb bottom of excavation when concrete is to bear on undisturbed soil. Excavate by hand to final foundation bearing grade just before placing concrete reinforcement. Trim bottoms to required lines and grades to leave solid base to receive other work.

2. Where concrete is to bear entirely on existing rock, remove loose soil and loose rock and place concrete to required lines and grades.
3. Where concrete is to bear partially on rock and partially on soil, immediately notify the Director's Representative before any backfilling or concrete placement occurs; the Director's Representative will determine the correct foundation treatment for the Work.

C. 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.

D. Excavation for Slabs and Floors: Excavate to the following depths below bottom of concrete for addition of Select Granular Material:

1. Interior Floors: 6 inches, unless otherwise indicated.
2. Exterior Slabs and Steps: 12 inches, unless otherwise indicated.

E. Excavation for Walks and Pavements: Excavate surfaces under walks and pavements to indicated lines, cross sections, elevations, and subgrades.

F. Excavation for Utility Trenches: 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, unless noted otherwise in contract plans.
2. Trench Width: Excavate trenches to uniform widths to provide 12 inches of clearance on each side of pipe or conduit.
3. Trench Bottoms: Excavate trenches 6 inches deeper than bottom of pipe and conduit elevations to allow for bedding course. Hand-excavate deeper for bells and coupling joints of pipe.

3.10 UNAUTHORIZED EXCAVATION

A. Fill unauthorized excavation under foundations, wall footings, and retaining walls with Select Granular Material, without altering top elevation of footing, foundation, or wall.

1. Unauthorized excavations under structural work shall be reported to the Director's Representative immediately before any backfilling or concrete work commences.

B. Elsewhere, backfill and compact unauthorized excavations as specified for authorized excavation of the same classification, unless otherwise directed by the Director's Representative.

3.11 SUBGRADE INSPECTION

A. Notify Director's Representative when excavations have reached required subgrade and are ready for inspection.

B. Proof-roll subgrade below the building slabs and pavements with a pneumatic-tired and loaded 10-wheel, tandem-axle dump truck weighing not less than 15 tons 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.

C. If Director's Representative determines that unsuitable material is present or that there are soft spots or areas of excessive pumping or rutting, excavate and replace with compacted backfill or fill material as directed.

1. Have cross section taken, under the supervision of an independent land surveyor, to determine volume of additional excavations.

D. Authorized additional excavation and replacement material will be paid for according to Contract provisions for changes in the Work.

E. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by the Director's Representative, without additional compensation.

3.12 BACKFILL & SOIL FILL

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.
8. Acceptance by the Director's Representative of construction below finish grade.

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

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

D. Place fill and backfill materials in layers not more than eight inches thick in loose depth, unless otherwise specified. Before compaction, moisten or aerate each layer as necessary to facilitate compaction to the specified density.

1. Place fill and backfill against foundation walls and in confined areas such as trenches not easily accessible by larger compaction equipment in maximum 6-inch-thick loose depth layers.
2. For large fill and backfill areas, the layer thickness may be modified by the Director's Representative, at the Contractor's written request, if in the Director's Representative's judgment, the equipment used is capable of compacting the fill material in a greater layer thickness. This request will include the type and specifications of compaction equipment intended for use.
3. For Open Graded Stone/Clean Stone (Item B-12, No. 1 crushed stone, No. 2 crushed stone, etc.) in excess of six inches: Material must be wrapped in separation fabric.

E. Concrete Walls

1. Do not place fill or backfill against concrete walls until the walls have attained 70 percent of their design strength. Place backfill against walls of structures containing basements or crawl spaces only after the first floor structural members are in place and any concrete components of the first floor structural system have attained 70 percent of their concrete design strength.
2. Prevent wedging action of backfill against structures backfilled on both sides, by placing backfill uniformly around structure so that the elevation on each side never differs by more than 24 inches.

F. Foundation Drains

1. Line pipe trench loosely with drainage geotextile. Lap successive sheets 18 inches.
2. Place drainage/cushion material a minimum of 4 inches deep under pipe and 6 inches on both sides and over top of pipe.
3. Completely wrap drainage/cushion material with drainage geotextile.

G. Perimeter Insulation: Before the insulation is installed, place and tamp specified backfill to a smooth plane even with the required elevation of the lower surface of the insulation.

H. Under Exterior Concrete Slabs and Steps:

1. Up to Subgrade Surface Elevation: Place Selected Fill when fill or backfill is required.
2. Subbase Material: Place 12 inches of Select Granular Material over subgrade surface.

I. Under Interior Concrete Slabs:

1. Up to Subgrade Surface Elevation: Place Selected Fill when fill or backfill is required.
2. Subbase Material: Place 6 inches of Select Granular Material over subgrade surface.

J. Under Pavements and Walks:

1. Up to Subgrade Surface Elevation: Place Selected Fill when fill or backfill is required.
2. Subbase Material: Place as indicated.

K. Utility Trench Backfill

1. 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.
2. Backfill voids with suitable material while removing shoring and bracing.
3. Initial Backfill:

    a. Soil Backfill: Place and compact initial backfill of Cushion Material to a minimum depth of 4 inches below the bottom, 12 inches to the sides, and to a height of 12 inches over the pipe or conduit.

        1) 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.

b. Flowable Fill: Place initial backfill of flowable fill (controlled low strength material) to a height of 12 inches over the pipe or conduit.

4. Coordinate backfilling with utilities testing.
5. Final Backfill:

a. Soil Backfill: Place and compact final backfill of Selected Fill soil to final subgrade elevation.

L. Backfilling Excavation Resulting From Removal of Unsuitable Material:

1. Up to Subgrade Surface Elevation: Place Select Granular Material when backfill is needed unless otherwise specified by the Directors Representative.

3.13 SOIL MOISTURE CONTROL

A. Where fill or backfill must be moisture conditioned before compaction, uniformly apply water to the surface and to each layer of fill or backfill to within 2 percent of optimum moisture content.

B. Prevent ponding or other free water on surface during and after compaction operations.

C. Remove and replace, or scarify and air dry, soil that is too wet to permit compaction to specified density. Soil that has been removed because it is too wet to permit compaction may be stockpiled or spread and allowed to dry. Assist drying by discing, harrowing or pulverizing, until moisture content is reduced to a value which will permit compaction to the percentage of maximum density specified.

D. When the existing ground surface to be compacted has a density less than that specified for the particular area classification, break up and pulverize, and moisture condition to facilitate compaction to the required percentage of maximum density.

3.14 COMPACTION OF SOIL BACKFILLS AND FILLS

A. Compact soil materials to not less than the following percentages of maximum density according to ASTM D1557 for the following:

1. Under structures, including area within 10-ft outside perimeter: 95 percent.
2. Under concrete slabs, steps, and pavements: 95 percent.
3. Under walkways: 95 percent.
4. Under landscaped areas, turf, or unpaved areas: 90 percent.
5. Pipe bedding: 95 percent.
6. Behind retaining walls: 92 percent.

3.15 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. Rough Grading:

1. Interior Grading: Trim unexcavated spaces within the building to levels indicated.

    a. Subgrade for Interior Slabs: Compact as specified to receive fill material. Finish subgrade surface within 1 inch above or below level specified for fill required.

2. Exterior Grading: Trim and grade area within the Grading Limit Line and excavations outside the limit line, required by this Contract, to a level of 4 inches below the finish grades indicated unless otherwise specified herein or where greater depths are indicated. Provide smooth uniform transition to adjacent areas.

    a. Slope cut and fill in transition areas, outside of the grading limit line, to meet corresponding levels of existing grades at a slope of 1 vertical to 2 horizontal unless otherwise indicated.
    b. Landscaped Areas: Provide uniform subgrade surface within 1 inch of required level to receive topsoil thickness specified. Compact fill as specified to within 3 inches of subgrade surface. Remove objectionable material detrimental to proper compaction or to placing full depth of topsoil. If the top 3 inches of subgrade has become compacted before placement of topsoil, harrow or otherwise loosen rough graded surface to receive topsoil to a depth of three inches immediately prior to placing topsoil.

C. Subgrade Surface for Walks and Pavement

1. Shape and grade subgrade surface as follows:

    a. Walks: Shape the surface of areas under walks to required line, grade and cross section, with the finish surface not more than 1 inch above or below the required subgrade surface elevation.
    b. Pavements: Shape the surface of areas under pavement to required line, grade and cross section, with the finish surface not more than 1/2 inch above or below the required subgrade surface elevation.

2. Grade Control: During construction, maintain lines and grades including crown and cross-slope of subbase course.
3. Thoroughly compact subgrade surface for walks and pavement by mechanical rolling, tamping, or with vibratory equipment as approved to the density specified.
4. Shoulders: Place shoulders along edges of filled subgrades to prevent lateral movement. Construct shoulders of Selected Fill material, placed in such quantity to compact to thickness of each subgrade course layer. Compact and roll at least a 2-foot wide additional layer of each subgrade course.

D. Finish Grading:

1. Uniformly grade rough graded areas within limits of the Grading Limit Line to finish grade elevations indicated.

2. Grade and compact to smooth finished surface within tolerances specified, and to uniform levels or slopes between points where finish elevations are indicated or between such points and existing finished grade.
3. Grade areas adjacent to building lines so as to drain away from structures and to prevent ponding.
4. Finish surfaces free from irregular surface changes, and as follows:

    a. Walks: Place and compact subbase material as specified. Shape surface of areas under walks to required line, grade and cross section, with the finish surface not more than 1/4 inch above or below the required subbase elevation.
    b. Pavements: Place and compact subbase material as specified. Shape surface of areas under pavement to required line, grade and cross section, with the finish surface not more than 1/4 inch above or below the required subbase elevation.
    c. Building Slabs: Grade subbase material smooth and even, free of voids, compacted as specified, and to required subbase elevation. Finish final grades within a tolerance of 1/4 inch when tested with a ten-foot straightedge.
    d. Surfaces To Receive Vapor Barrier: Provide smooth surfaces graded, tamped and/or rolled, entirely free of obstructions or protruding objects.

5. Spread topsoil directly upon prepared subgrade surface to a depth measuring 4 inches after natural settlement of the topsoil has occurred in areas to be seeded or to receive sod. Perform topsoil spreading operations only during dry weather. Place to greater depth when necessary to adjust grades to required elevations.

    a. Approved existing topsoil within the Grading Limit Line may be used. Provide additional topsoil from outside sources as required.

6. Finish topsoil surface free of depressions that would trap water, free of stones over 1 inch in any dimension, and free of debris or other objectionable material. Finished surfaces shall conform to the contour lines and elevations indicated on the drawings or as directed by the Director's Representative.

3.16 FIELD QUALITY CONTROL

A. Special Inspections: Director's Representative will engage a qualified Special Inspector to perform the following special inspections:

1. Determine prior to placement of fill that site has been prepared in compliance with requirements.
2. Determine that fill material classification and maximum lift thickness comply with requirements.
3. Determine, during placement and compaction, that in-place density of compacted fill complies with requirements.

B. Testing Agency: Director's Representative will engage a qualified geotechnical engineering testing agency to perform tests and inspections.

C. Coordinate with and allow testing agency to inspect and test subgrades and each fill or backfill layer; provide testing agency minimum three working days advanced notice prior to all phases of filling and backfilling operations. Proceed with subsequent earthwork activities only after test results for previously completed work comply with requirements.

D. Footing Subgrade: At footing subgrades, at least one test of each soil stratum will be performed to verify design bearing capacities. Subsequent verification and approval of other footing subgrades may be based on a visual comparison of subgrade with tested subgrade when approved by Director's Representative.

E. Testing agency will test compaction of soils in place according to ASTM D1557, as applicable. Tests will be performed at the following locations and frequencies:

1. Paved and Building Slab Areas: At subgrade and at each compacted fill and backfill layer, at least one test for every 2000 sq. ft. or less of paved area or building slab but in no case fewer than three tests.
2. Foundation Wall Backfill: At each compacted backfill layer, at least one test for every 100 feet or less of wall length but no fewer than two tests.
3. Trench Backfill: At each compacted initial and final backfill layer, at least one test for every 150 feet or less of trench length but no fewer than two tests.

F. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil materials to depth required; recompact and retest until specified compaction is obtained.

3.17 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 Director's Representative; 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.

3.18 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Remove from State property and dispose of excess and unsuitable materials, including materials resulting from clearing, grubbing and removal of existing improvements; soil; trash; and debris.

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 310000

SECTION 310001 - EARTHWORK MATERIALS

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. Soil/Aggregate Materials.
2. Geosynthetics.

B. Related Requirements:

1. Section 310000 - Earthwork.

1.3 REFERENCE STANDARDS

A. New York State Department of Transportation (NYS DOT)

1. NYSDOT 620 - Bank and Channel Protection
2. NYSDOT 703 - Aggregates
3. NYSDOT 733 - Earthwork Materials

1.4 SUBMITTALS

A. Submittals for this Section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Manufacturer’s installation instructions shall be provided along with product data.

C. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).

D. Product Data: Submit name of imported materials source.

E. Qualification Data: For ASTM certified soils testing agency.

F. Material Test Reports: For each on-site and borrow soil material proposed for fill and backfill as follows:

1. Classification according to ASTM D2487.
2. Laboratory compaction curve according to ASTM D1557.

G. Samples: Submit, in airtight containers, samples of the following types to ASTM certified soil testing laboratory. Provide Director's Representative with the laboratory test results for gradation, Proctors and soundness tests.

1. Select Granular Material: 50 - 60 lb. (Two Samples).
2. Subbase Course Type 2: 50 - 60 lb. (Two Samples).
3. Selected Fill: 40 - 50 lb.
4. Cushion Material: 30 lb.
5. Item B-12: 30lb, each gradation.
6. Crushed Stone: 30 lb.

H. Source Quality-Control Submittals:

1. Subbase Materials: Provide name and location of source and the NYSDOT Source Number. If the material is not being taken from an approved NYSDOT source, the soil laboratory test results for gradation and soundness tests performed by an ASTM certified soils laboratory will be required.
2. Other Aggregates: Provide name and location of source and soil laboratory test results for gradation and soundness tests performed by an ASTM certified soils laboratory.
3. Topsoil: Topsoil used on this project shall be tested by a certified soils laboratory for organic matter, pH value, and gradation, and must be approved before placement.

I. Supplier's Certificate: Certify that products meet or exceed specified requirements.

1.5 QUALITY ASSURANCE

A. Furnish each aggregate and/or topsoil material from a single source throughout the Work.

PART 2 - PRODUCTS

2.1 SOIL/STONE MATERIALS

A. Select Granular Material.

1. Description: Stockpiled, sound, durable, sand, gravel, stone, or blends of these materials.
2. Quality: Free of organic and other deleterious materials.
3. Magnesium Sulfate Soundness Test: 20% maximum loss by weight after four test cycles.
4. Plasticity Index: The plasticity index of the material passing the No. 40 mesh sieve shall not exceed 5.0.
5. Elongated Particles: Not more than 30%, by weight, of the particles retained on a ½ inch sieve will consist of flat or elongated particles. A flat or elongated particle is defined as one which has its greatest dimension more than three times its least dimension.
6. Comply with the gradation requirements specified below:

Sieve Size	Percent Passing
2 inch	100
1/4 inch	30-65
No. 40	5-40
No. 200	0-10

B. Subbase Course Type 2.

1. Description: Stockpiled, crushed ledge rock or approved blast furnace slag.
2. Quality: Free of organic and other deleterious materials.
3. Magnesium Sulfate Soundness Test: 20% maximum loss by weight after four test cycles.
4. Plasticity Index: The plasticity index of the material passing the No. 40 mesh sieve shall not exceed 5.0.
5. Elongated Particles: Not more than 30%, by weight, of the particles retained on a ½ inch sieve will consist of flat or elongated particles. A flat or elongated particle is defined as one which has its greatest dimension more than three times its least dimension.
6. Comply with the gradation requirements specified below:

Sieve Size	Percent Passing
2 inch	100
1/4 inch	25-60
No. 40	5-40
No. 200	0-10

C. Selected Fill.

1. Source: Imported Borrow
2. Description: Sound, durable, sand, gravel, stone, or blends of these materials.
3. Quality: Free of organic and other deleterious materials.
4. Comply with the gradation requirements specified below:

Sieve Size	Percent Passing
4 inch	100
No. 40	0-70
No. 200	0-15

D. Cushion Material.

1. Description: Clean, hard, durable, uncoated particles,
2. Quality: Free from lumps of clay and all deleterious substances.
3. Comply with the gradation requirements specified below:

Sieve Size	Percent Passing
1/4 inch	100
No. 60	0-35
No. 100	0-10

E. Item B-12.

1. Description: Equal blend of No.1 and No. 2 Crushed Aggregate that complies with material requirements of NYSDOT Article 703-02, crushed stone only.
2. Comply with the gradation requirements specified below:

Sieve Size	Percent Passing
1 1/2 inch	100
1 inch	95-100
1/2 inch	45-60
1/4 inch	0-15

F. No. 1 Coarse Aggregate.

1. Description: Crushed stone that complies with the material requirements of NYSDOT Article 703-02.
2. Comply with the gradation requirements specified below:

Sieve Size	Percent Passing
1 inch	100
1/2 inch	90-100
1/4 inch	0-15

G. No. 2 Coarse Aggregate.

1. Description: Crushed stone that complies with the material requirements of NYSDOT Article 703-02.
2. Comply with the gradation requirements specified below:

Sieve Size	Percent Passing
1 1/2 inch	100
1 inch	90-100
1/2 inch	0-15

2.2 Geosynthetics

A. Subsurface Drainage Geotextile: Nonwoven needle-punched geotextile, manufactured for subsurface drainage applications, made from polyolefins or polyesters; with elongation greater than 50 percent; complying with AASHTO M 288 and the following, measured per test methods referenced:

1. Survivability:

a. Class 2; AASHTO M 288.
b. As follows:

1) Grab Tensile Strength: 157 lbf; ASTM D4632.
2) Sewn Seam Strength: 142 lbf; ASTM D4632.
3) Tear Strength: 56 lbf; ASTM D4533.
4) Puncture Strength: 56 lbf; ASTM D4833.

c. Apparent Opening Size: No. 60 sieve, maximum; ASTM D4751.

B. Separation Geotextile: Woven geotextile fabric, manufactured for separation applications, made from polyolefins or polyesters; with elongation less than 50 percent; complying with AASHTO M 288 and the following, measured per test methods referenced:

1. Survivability:

a. Class 2; AASHTO M 288.
b. As follows:

1) Grab Tensile Strength: 247 lbf; ASTM D4632.
2) Sewn Seam Strength: 222 lbf; ASTM D4632.
3) Tear Strength: 90 lbf; ASTM D4533.
4) Puncture Strength: 90 lbf; ASTM D4833.

c. Apparent Opening Size: No. 60 sieve, maximum; ASTM D4751.
d. Permittivity: 0.02 per second, minimum; ASTM D4491.
e. UV Stability: 50 percent after 500 hours' exposure; ASTM D4355.
f.

2.3 ACCESSORIES

A. Detectable Warning Tape: Acid- and alkali-resistant, polyethylene film warning tape manufactured for marking and identifying underground utilities, a minimum of 6 inches wide and 4 mils thick, continuously inscribed with a description of the utility, with metallic core encased in a protective jacket for corrosion protection, detectable by metal detector when tape is buried up to 30 inches deep; colored as follows:

1. Red: Electric.
2. Yellow: Gas, oil, steam, and dangerous materials.
3. Orange: Telephone and other communications.
4. Blue: Water systems.
5. Green: Sewer systems.

PART 3 - EXECUTION (NOT USED)

END OF SECTION 310001

SECTION 312500 - EROSION AND SEDIMENTATION CONTROLS

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. Temporary Structural Measures
2. Permanent Structural Measures

1.3 REFERENCES

A. New York State Standards and Specifications for Erosion and Sediment Control, current version as published by the New York State Department of Environmental Conservation.

B. New York State Department of Environmental Conservation SPDES General Permit for Stormwater Discharges from Construction Activity, current version, as published by the New York State Department of Environmental Conservation.

C. ASTM International:

1. ASTM C127 - Standard Test Method for Density, Relative Density (Specific Gravity), and Absorption of Coarse Aggregate.
2. ASTM D698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft3 (600 kN-m/m3).
3. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft3 (2,700 kN-m/m3).
4. ASTM D6938 - Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth).

1.4 SUBMITTALS

A. Submittals for this Section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Manufacturer’s installation instructions shall be provided along with product data.

C. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).

D. Trained Contractor Documentation:

1. For each Trained Contractor, submit copy of completion certificate or card for NYS Department of Environmental Conservation endorsed Erosion & Sediment Control training.

E. Product Data: Submit data on temporary and permanent erosion and sediment control measures.

F. Submit proposed mix design of each class of concrete for review prior to commencement of Work.

G. Samples:

1. Submit two samples or rock, minimum 5 tons each or one-half total Project quantity, whichever is smaller. Provide one sample in place at construction site and provide other sample at quarry. Construction site sample may be incorporated into the Work. Samples will be used as reference for judging size, and graduation of rock supplied and placed.

H. Test Reports: Indicate certified tests results for precast concrete at manufacturing facility, cast-in-place concrete in field, and granular backfill.

I. Manufacturer's Certificate: Certify Products meet or exceed specified requirements.

1.5 QUALITY ASSURANCE

A. Perform Work according to NEW YORK STATE STANDARDS AND SEPCIFICATIONS FOR EROSION AND SEDIMENT CONTROL by NYS Department of Environmental Conservation (i.e., Bluebook) standards.

1.6 PRE-INSTALLATION MEETING

A. Section 013000 - Administrative Requirements: Pre-installation meeting.

B. Convene minimum one week prior to commencing Work of this Section.

1.7 ENVIRONMENTAL REQUIREMENTS

A. Do not place grout when air temperature is below freezing.

B. Do not place concrete when base surface temperature is less than 40 degrees F, or surface is wet or frozen.

1.8 RESPONSIBILITY

A. Adhere to all erosion and sediment control requirements presented in the contract Drawings. Comply with all applicable NYSDEC regulatory requirements.

B. The Trained Contractor(s) shall inspect erosion and sediment controls on a daily basis to ensure that they are being maintained in effective operating condition at all times. If deficiencies are identified, begin implementing corrective actions within one business day and complete the corrective actions in a reasonable time frame.

1. For construction activities where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and temporary stabilization measures have been applied to all disturbed areas, the trained contractor can stop conducting maintenance inspections. The trained contractor shall recommence maintenance inspections as soon as soil disturbance activities resume or winter shutdown ceases.
2. For winter shutdown, the stabilization activities must be completed before snow cover or frozen ground. If vegetation is required, seeding, planting and/or sodding must be scheduled to avoid die-off from fall frosts and allow for proper germination/establishment. Trained contractor inspections must resume no later than April 1.
3. For construction sites where soil disturbance activities have been shut down with partial project completion, the trained contractor can stop conducting maintenance inspections if all areas disturbed as of the project shutdown date have achieved final stabilization and all post-construction stormwater management practice required (if applicable) for the completed portion of the project have been constructed in conformance with the SWPPP and are operational.

C. During construction conduct operations to prevent damage to any water body from pollution by debris, sediment, chemical or other foreign material, or from the manipulation of equipment and/or materials in or near a stream or ditch flowing directly to a stream. Any water which has been used for wash purposes or other similar operations that becomes polluted with sewage, silt, cement, concentrated chlorine, oil, fuels, lubricants, bitumens, or other impurities shall not be discharged into any water body.

D. In the event of conflict between these specifications and the regulation of other Federal, State, or local jurisdictions, the more restrictive regulations shall apply.

1.9 DESCRIPTION

A. The Work shall consist of furnishing, installing, inspecting, maintaining, and removing erosion and sediment control measures as shown on the contract documents or as ordered by the Director's Representative during the life of the contract to provide erosion and sediment control.

B. Temporary structural measures provide erosion control protection to a critical area for an interim period. A critical area is any disturbed, bare slope subject to erosion. These are used during construction to prevent off-site sedimentation. Temporary structural measures shall include:

1. Stabilized construction access
2. Dust control
3. Compost Filter Sock
4. Erosion control matting
5. Storm drain inlet protection

C. Permanent structural measures also control protection to a critical area. They are used to convey runoff to a safe outlet. They remain in place and continue to function after completion of construction. Permanent structural measures shall include:

1. Land grading

PART 2 - PRODUCTS

2.1 GEOTEXTILE MATERIALS

A. Geotextile Fabric: As specified in Section 310001 Earthwork Materials.

2.2 BLOCK, STONE, AGGREGATE, AND SOIL MATERIALS

A. Stone: Subbase Course, Type 2, as specified in Section 310001 Earthwork Materials.

B. Coarse Aggregate: Select Granular Material, as specified in Section 310001 Earthwork Materials.

C. Soil Backfill: Selected Fill, as specified in Section 310001 Earthwork Materials.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify compacted subgrade, granular base, or stabilized soil is acceptable and ready to support devices and imposed loads.

B. Verify gradients and elevations of base or foundation for other Work are correct.

3.2 SITE STABILIZATION

A. Incorporate erosion control devices indicated on the Drawings into the Project at the earliest practicable time.

B. Construct, stabilize and activate erosion controls before site disturbance within tributary areas of those controls.

C. Stockpile and waste pile heights shall not exceed 35 feet. Slope stockpile sides at 2:1 or flatter.

D. Stabilize any disturbed area of affected erosion control devices on which activity has ceased and which will remain exposed for more than 20 days.

1. During non-germinating periods, apply mulch at recommended rates.

2. Stabilize disturbed areas which are not at finished grade and which will be disturbed within one year in accordance with Section 329200 Turf and Grasses and Section 329300 Plants at 95 percent of permanent application rate with no topsoil.
3. Stabilize disturbed areas which are either at finished grade or will not be disturbed within one year in accordance with Section 329200 Turf and Grasses and Section 329300 Plants permanent seeding specifications.

E. Stabilize diversion channels, sediment traps, and stockpiles immediately.

3.3 FIELD QUALITY CONTROL

A. Field inspecting, testing, adjusting, and balancing.

B. Inspect erosion control devices on a weekly basis and after each runoff event. Make necessary repairs to ensure erosion and sediment controls are in good working order.

C. Field test concrete in accordance with Section 033000.

D. Compaction Testing: As specified in Section 310000.

E. Compaction Testing: In accordance with ASTM D1557.

F. When tests indicate Work does not meet specified requirements, remove Work, replace and retest.

G. Frequency of Compaction Testing: One for each lift.

3.4 CLEANING

A. When sediment accumulation in sedimentation structures has reached a point one-third depth of sediment structure or device, remove and dispose of sediment.

B. Do not damage structure or device during cleaning operations.

C. Do not permit sediment to erode into construction or site areas or natural waterways.

D. Clean channels when depth of sediment reaches approximately one-half channel depth.

3.5 PROTECTION

A. Immediately after placement, protect paving from premature drying, excessive hot or cold temperatures, and mechanical injury.

B. Do not permit construction traffic over paving for 7 days minimum after finishing. until 75 percent design strength of concrete has been achieved.

C. Protect paving from elements, flowing water, or other disturbance until curing is completed.

3.6 WORK AREAS

A. The Director's Representative has the authority to limit the surface area of erodible earth exposed by earthwork operations and to direct the Contractor to provide immediate temporary or permanent erosion measures to minimize damage to property and contamination of watercourses and water impoundments. Under no circumstances will the area of erodible earth material exposed at one time exceed 50,000 sq. ft. The Director's Representative may increase or decrease this area of erodible earth material exposed at one time as determined by their analysis of project, weather and other conditions. The Director's Representative may limit the area of clearing and grubbing and earthwork operations in progress commensurate with the Contractor's demonstrated capability in protecting erodible earth surfaces with temporary, permanent, vegetative or biotechnical erosion control measures.

B. Schedule the work so as to minimize the time that earth areas will be exposed to erosive conditions. Provide temporary structural measures immediately to prevent any soil erosion.

C. Coordinate the use of permanent controls or finish materials shown with the temporary erosion measures.

D. All erosion and sediment control devices must be maintained in working order until the site is stabilized. All preventative and remedial maintenance work, including clean out, repair, replacement, re-grading, re-seeding, or re-mulching, must be performed immediately.

E. After final stabilization has been achieved temporary sediment and erosion controls must be removed. Areas disturbed during removal must be stabilized immediately.

END OF SECTION 312500

SECTION 315000 - EXCAVATION SUPPORT AND PROTECTION

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 temporary excavation support and protection systems.

1.3 SUBMITTALS

A. Submittals for this Section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Manufacturer's installation instructions shall be provided along with product data.

C. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).

D. Product Data: For each type of product.

1. Include construction details, material and accessory descriptions, performance properties, and dimensions of individual components and profiles, and calculations for excavation support and protection system.

E. Shop Drawings: For excavation support and protection system. When the proposed excavation exceeds 20' in depth the shop drawings must be prepared by or under the supervision of a New York State licensed Professional Engineer.

1. Include plans, elevations, sections, and details.
2. Show arrangement, locations, and details of soldier piles, piling, lagging, tiebacks, bracing, and other components of excavation support and protection system according to engineering design.
3. Indicate type and location of waterproofing.
4. Include a written plan for excavation support and protection, including intended excavation procedure and sequence of construction of support and protection coordinated with progress of excavation. Include all proposed tolerances.

F. Delegated-Design Submittal: For excavation support and protection systems, including analysis data signed and sealed by the New York State licensed Professional Engineer responsible for their preparation.

G. Qualification Data: For the following:

1. Land Surveyor.

2. Professional Engineer: Experience with providing delegated-design engineering services of the type indicated, including documentation that Engineer is licensed in the State of New York.

H. Contractor Calculations: For excavation support and protection system. Include analysis data signed and sealed by the New York State licensed Professional Engineer responsible for their preparation.

I. Existing Conditions: Using photographs or video recordings, show existing conditions of adjacent construction and site improvements that might be misconstrued as damage caused by inadequate performance of excavation support and protection systems. Submit before Work begins.

1.4 CLOSEOUT SUBMITTALS

A. Record Drawings: Identify locations and depths of capped utilities, abandoned-in-place support and protection systems, and other subsurface structural, electrical, or mechanical conditions.

1.5 FIELD CONDITIONS

A. Interruption of Existing Utilities: Do not interrupt any utility-serving facilities unless permitted to do so under the following conditions and then only after arranging to provide temporary utility according to requirements indicated:

1. Notify Director's Representative no fewer than two days in advance of proposed interruption of utility.
2. Do not proceed with interruption of utility without Director's Representative's written permission.

B. Survey Work: Engage a qualified Land Surveyor or Professional Engineer, licensed in the State of New York, to survey adjacent existing buildings, structures, and site improvements; establish exact elevations at fixed points to act as benchmarks. Clearly identify benchmarks, and record existing elevations.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Delegated Design: Engage a New York State licensed Professional Engineer, to design excavation support and protection systems to resist all lateral loading and surcharge, including but not limited to, retained soil, groundwater pressure, adjacent building loads, adjacent traffic loads, construction traffic loads, material stockpile loads, and seismic loads, based on the following:

1. Compliance with OSHA Standards and interpretations, 29 CFR 1926, Subpart P.

2. Compliance with requirements of authorities having jurisdiction.

2.2 MATERIALS

A. Provide materials that are either new or in serviceable condition.

B. Structural Steel: ASTM A36, ASTM A690, or ASTM A992.

C. Steel Sheet Piling: ASTM A328, ASTM A572, or ASTM A690; with continuous interlocks.

1. Corners: Roll-formed corner shape with continuous interlock.

D. Wood Lagging: Lumber, mixed hardwood, nominal rough thickness of size and strength required for application.

E. Cast-in-Place Concrete: ACI 301, of compressive strength required for application.

F. Reinforcing Bars: ASTM A615, Grade 60, deformed.

G. Tiebacks: Steel bars, ASTM A722.

H. Tiebacks: Steel strand, ASTM A416.

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 that could develop during excavation support and protection system operations.

1. Shore, support, and protect utilities encountered.

3.2 INSTALLATION - GENERAL

A. Locate excavation support and protection systems clear of permanent construction, so that construction and finishing of other work is not impeded.

B. Install excavation support and protection systems to ensure minimum interference with roads, streets, walks, and other adjacent occupied and used facilities.

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

C. Install excavation support and protection systems without damaging existing buildings, structures, and site improvements adjacent to excavation.

3.3 SOLDIER PILES AND LAGGING

A. Install steel soldier piles before starting excavation.

1. Extend soldier piles below excavation grade level to depths adequate to prevent lateral movement.
2. Space soldier piles at regular intervals not to exceed allowable flexural strength of wood lagging.
3. Accurately align exposed faces of flanges to vary not more than 2 inches from a horizontal line and not more than 1:120 out of vertical alignment.

B. Install wood lagging within flanges of soldier piles as excavation proceeds.

1. Trim excavation as required to install lagging.
2. Fill voids behind lagging with soil, and compact.

C. Install wales horizontally at locations indicated on Drawings and secure to soldier piles.

3.4 SHEET PILING

A. Before starting excavation, install one-piece sheet piling lengths and tightly interlock vertical edges to form a continuous barrier.

B. Accurately place the piling using templates and guide frames unless otherwise recommended in writing by the sheet piling manufacturer.

1. Limit vertical offset of adjacent sheet piling to 60 inches.
2. Accurately align exposed faces of sheet piling to vary not more than 2 inches from a horizontal line and not more than 1:120 out of vertical alignment.

C. Cut tops of sheet piling to uniform elevation at top of excavation.

3.5 TIEBACKS

A. Drill, install, grout, and tension tiebacks.

B. Test load-carrying capacity of each tieback and replace and retest deficient tiebacks.

1. Have test loading observed by a qualified Professional Engineer, licensed in the State of New York, responsible for design of excavation support and protection system.

C. Maintain tiebacks in place until permanent construction is able to withstand lateral earth and hydrostatic pressures.

3.6 BRACING

A. Locate bracing to clear columns, floor framing construction, and other permanent work. If necessary to move brace, install new bracing before removing original brace.

1. Do not place bracing where it will be cast into or included in permanent concrete work unless otherwise approved by the Director's Representative.
2. Install internal bracing if required to prevent spreading or distortion of braced frames.
3. Maintain bracing until structural elements are supported by other bracing or until permanent construction is able to withstand lateral earth and hydrostatic pressures.

3.7 MAINTENANCE

A. Monitor and maintain excavation support and protection system.

B. Prevent surface water from entering excavations by grading, dikes, or other means.

C. Continuously monitor vibrations, settlements, and movements to ensure stability of excavations and constructed slopes and to ensure that damage to permanent structures is prevented.

3.8 FIELD QUALITY CONTROL

A. Survey-Work Benchmarks: Resurvey benchmarks regularly during installation of excavation support and protection systems, excavation progress, and for as long as excavation remains open.

1. Maintain an accurate log of surveyed elevations and positions for comparison with original elevations and positions.
2. Promptly notify the Director's Representative if changes in elevations or positions occur or if cracks, sags, or other damage is evident in adjacent construction.

B. Promptly correct detected bulges, breakage, or other evidence of movement to ensure that excavation support and protection system remains stable.

C. Promptly repair damages to adjacent facilities caused by installation or faulty performance of excavation support and protection systems.

3.9 REMOVAL AND REPAIRS

A. Remove excavation support and protection systems when construction has progressed sufficiently to support excavation and earth and hydrostatic pressures.

1. Remove in stages to avoid disturbing underlying soils and rock or damaging structures, pavements, facilities, and utilities.
2. Remove excavation support and protection systems to a minimum depth of 12 inches below overlying construction, and abandon remainder.

a. If tiebacks are used and permitted to remain abandoned in place by Director's Representative, they must be cut to remove stress on tendons. Additionally, any other portion of system under tension must be destressed.

3. Fill voids immediately with approved backfill compacted to density specified in Section 310000 "Earthwork."
4. Repair or replace, as approved by Director's Representative, adjacent work damaged or displaced by removing excavation support and protection systems.

END OF SECTION 315000

SECTION 321216 - ASPHALT PAVING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Asphalt paving.

B. Related Requirements:

1. Section 310000 "Earthwork" for subgrade preparation, fill material, separation geotextiles, unbound-aggregate subbase and base courses, and aggregate pavement shoulders.

1.2 REFERENCE STANDARDS

A. American Association of State Highway and Transportation Officials

1. AASHTO M 29 - Standard Specification for Fine Aggregate for Asphalt Mixtures
2. AASHTO M 140 - Standard Specification for Emulsified Asphalt
3. AASHTO M 208 - Standard Specification for Cationic Emulsified Asphalt
4. AASHTO M 288 - Standard Specification for Geosynthetic Specification for Highway Applications
5. AASHTO M 320 - Standard Specification for Performance-Graded Asphalt Binder
6. AASHTO R 97 - Standard Practice for Sampling Asphalt Mixtures
7. AASHTO T 245 - Standard Method of Test for Resistance to Plastic Flow of Asphalt Mixtures Using Marshall Apparatus.

B. Asphalt Institute

1. AI MS-2 - Asphalt Mix Design Methods
2. AI MS-22 - Construction of Hot Mix Asphalt Pavements

C. ASTM International

1. ASTM D242 - Standard Specification for Mineral Filler for Asphalt Mixtures
2. ASTM D977 - Standard Specification for Emulsified Asphalt
3. ASTM D979 - Standard Practice for Sampling Bituminous Paving Mixtures
4. ASTM D1188 - Standard Test Method for Bulk Specific Gravity and Density of Compacted Bituminous Mixtures Using Coated Samples
5. ASTM D2027 - Standard Specification for Cutback Asphalt (Medium-Curing Type)
6. ASTM D2041 - Standard Test Method for Theoretical Maximum Specific Gravity and Density of Asphalt Mixtures
7. ASTM D2397 - Standard Specification for Cationic Emulsified Asphalt
8. ASTM D2726 - Standard Test Method for Bulk Specific Gravity and Density of Non-Absorptive Compacted Asphalt Mixtures

9. ASTM D2950 - Standard Test Method for Density of Bituminous Concrete in Place by Nuclear Methods
10. ASTM D3141 - Standard Specification for Asphalt for Undersealing Portland-Cement Concrete Pavements
11. ASTM D3381 - Standard Specification for Viscosity-Graded Asphalt Binder for Use in Pavement Construction
12. ASTM D3549 - Standard Test Method for Thickness or Height of Compacted Asphalt Mixture Specimens
13. ASTM D3666 - Standard Specification for Minimum Requirements for Agencies Testing and Inspecting Road and Paving Materials
14. ASTM D3910 - Standard Practices for Design, Testing, and Construction of Slurry Seal
15. ASTM D6373 - Standard Specification for Performance Graded Asphalt Binder
16. ASTM D6690 - Standard Specification for Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements
17. ASTM D6927 - Standard Test Method for Marshall Stability and Flow of Asphalt Mixtures

D. New York State Department of Transportation (NYS DOT)

1. DOT 300 – Bases and Subbases
2. DOT 400 – Asphalt Mixture and Pavement
3. DOT 600 – Incidental Construction
4. DOT MM 5.16 - Asphalt Mixture Design And Mixture Verification Procedures

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1. The attendance at this meeting will include Contractor's Paving Superintendent, Chief Inspector or Paving Inspector(s), asphalt plant representative, density gauge operator, depending on the compaction method used, and work zone traffic control (WZTC) competent person (if applicable).

2. Review methods and procedures related to 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 asphalt.
b. Review requirements for protecting paving work, including restriction of traffic during installation period and for remainder of construction period.

1.4 SUBMITTALS

A. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Manufacturer's installation instructions shall be provided along with product data.

C. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).

D. Product Data: Include manufacturer / provider / plant name, product name, technical data and tested physical and performance properties.

1. Joint sealant.

E. Submit an Environmental Product Declaration (EPD) from the manufacturer for each asphalt mix within this specification section, if available. A statement of the contractor's good faith effort to obtain the EPD shall be provided if not available.

1. Manufacturer-provided EPDs must be Product Specific Type III (Third-Party Reviewed), in adherence with ISO 14025 *Environmental labels and declarations*, ISO 14044 *Environmental management – Life cycle assessment*, and ISO 21930 *Core rules for environmental product declarations of construction products and services.*

F. Asphalt Designs:

1. Certification, by authorities having jurisdiction, of approval of each asphalt design proposed for the Work.
2. NYSDOT Approved Plant name, Number, and location of the asphalt plant for each asphalt design proposed for the Work.
3. Asphalt Mix Design Test results that are less than 6 months old for each mix proposed for the Work.

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

H. Material Delivery Tickets for pavement materials including the following information.

1. Ticket Number.
2. Plant Identification.
3. Project Name.
4. Mix Type.
5. Quantity of material in vehicle.
6. Date and Time.
7. Statement that mixes containing recycled materials will perform equal to mixes produced from all new materials.

I. Field quality-control reports.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications: A paving-mix manufacturer registered with and approved by the NYS Department of Transportation.

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

C. Regulatory Requirements: Comply with materials, workmanship, and other applicable requirements of NYS Department of Transportation Standard Specifications for asphalt paving work.

1. Measurement and payment provisions and safety program submittals included in standard specifications do not apply to this Section.

1.6 FIELD CONDITIONS

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

B. Discontinue paving when surface temperatures fall below requirements listed in NYSDOT Table 404-1 unless otherwise specified in the General Conditions of this Contract or as directed by the Director's Representative.

C. Pavement is restricted by dates listed in the General Conditions.

PART 2 - PRODUCTS

2.1 AGGREGATES

A. All aggregate used in design mixes shall be as specified in NYS DOT Specification Section 401-2.02 B; Coarse Aggregate Type F2 Conditions.

2.2 ASPHALT MATERIALS

A. Asphalt: Use aggregate and PG binder from suppliers listed in the NYS DOT's Approved List for Fine and Coarse Aggregates and Performance Graded (PG) Binders and Warm Mix Technology for Asphalt Paving respectively. Mineral filler shall meet the requirements of NYS DOT Section 703-08.

B. Supply approved asphalt mixtures that meet the requirements of NYS DOT MM 5.16 *Asphalt Mixture Design and Mixture Verification Procedures*. Each mixture must be obtained from a single plant for the duration of the project. The following NYS DOT items only shall be utilized for this project:

1. 9.5 F2 Top Course Asphalt, 80 Series Compaction.
2. 19.0 F9 Binder Course Asphalt, 80 Series Compaction.
3. 37.5 F9 Base Course Asphalt, 80 Series Compaction.
4. Trueing & Leveling Course: DOT Table 404-2 *Mixture Selection for T&L Course.*

C. Tack Coat: ASTM D977 or AASHTO M 140 emulsified asphalt, slow setting, diluted in water, of suitable grade and consistency for application. Meeting NYSDOT 702-3601, grade SS-1h.

2.3 AUXILIARY MATERIALS

A. Herbicide: Do not use herbicides.

B. Sand: ASTM D1073 or AASHTO M 29, Grade No. 2 or No. 3.

C. Joint Sealant: Single component, hot-applied, rubberized asphalt sealant conforming to ASTM D3405.

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. Subgrade compaction shall adhere to Section 310000.

3.3 SURFACE PREPARATION

A. Prepare existing surfaces in accordance with DOT Section 402-3.05, Conditioning of Existing Surface.

B. 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.

3.4 ASPHALT PLACEMENT

A. Spread and Finish asphalt in accordance with DOT Section 404-3.06, Spreading and Finishing.

B. Remove and restore paved areas that are defective or contaminated as delineated by the Director's Representative at no additional cost to the State.

3.5 JOINTS

A. Asphalt joints shall be in accordance with DOT Section 404-3.09, Joints.

3.6 COMPACTION

A. Provide compaction of asphalt mixtures in general accordance with DOT Section 404-3.07, Compaction, Paragraph D, 80 Series Compaction Methods, specifically meeting the minimum requirements as shown in Table 404-3 Number of Passes.

1. The Director's Representative may increase or decrease the number of passes to obtain adequate density of the compacted asphalt.
2. The Director's Representative may also approve alternate compaction procedures where the specified procedures are not applicable.
3. Testing to be performed at the direction of and in locations chosen by the Director's Representative. Target compaction is 95% (92% - 97% range is acceptable; as mixture maximum theoretical density).

3.7 INSTALLATION TOLERANCES

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

1. Base Course, Binder Course and Surface Course: Plus or minus ¼ inch when the total nominal thickness indicated on the plans is 4 inches or less. Plus or minus ½ inch when the total nominal thickness is over 4 inches but not more than 8 inches. When the asphalt mixture is placed on newly constructed subbase material, an additional tolerance of ½ inch will be allowed both in the nominal thickness of the course placed directly on the subbase and the total pavement thickness.

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 and Binder Course: 1/4 inch.
2. Surface Course: 1/4 inch.
3. Crowned Surfaces: Test with crowned template centered and at right angle to crown. Maximum allowable variance from template is 1/4 inch.
4. Variations exceeding ¼ inch will be appropriately corrected or the pavement be removed and replaced at no additional cost to the State.

3.8 FIELD QUALITY CONTROL

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

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

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

D. Asphalt Traffic-Calming Devices: Finished height of traffic-calming devices above pavement will be measured for compliance with tolerances.

E. Density Testing: Testing agency will take samples of uncompacted paving mixtures and compacted pavement in accordance with ASTM D979.

1. Reference maximum theoretical density will be determined by averaging results from four samples of asphalt-paving mixture delivered daily to site, prepared in accordance with ASTM D2041, and compacted in accordance with job-mix specifications.
2. Density of compacted pavement will be determined by testing core samples in accordance with ASTM D1188 or ASTM D2726.

    a. One core sample will be taken for every 1000sq. yd. or less of installed pavement, with no fewer than three cores taken.
    b. Field density of in-place compacted pavement may also be determined by nuclear method in accordance with ASTM D2950 and coordinated with ASTM D1188 or ASTM D2726.

F. Replace and compact asphalt where core tests were taken.

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

END OF SECTION 321216

SECTION 321723 - PAVEMENT MARKINGS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Painted markings applied to asphalt paving.

1.2 REFERENCES

A. United States Department of Justice (US DOJ)

1. Americans with Disabilities Act (ADA), Standards for Accessible Design

B. Building Code of New York State Chapter 11 - Accessibility

C. New York State Department of Transportation (NYS DOT)

1. DOT 640 – Reflectorized Pavement Marking Paints

1.3 SUBMITTALS

A. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Manufacturer’s installation instructions shall be provided along with product data.

C. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).

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

E. Samples:

1. For each exposed product and for each color and texture specified; on rigid backing, 8 inches square.

F. Quality Assurance:

1. Certification: Affidavit by the paint applicator, certifying that the materials comply with the current regulatory requirements in effect at the time products were delivered and applied.

1.4 QUALITY ASSURANCE

A. Regulatory Requirements: Comply with materials, workmanship, and other applicable requirements of NYS Department of Transportation Standards and Specifications for pavement-marking work.

1. Measurement and payment provisions and safety program submittals included in standard specifications do not apply to this Section.

1.5 FIELD CONDITIONS

A. Environmental Limitations: Proceed with pavement marking only on clean, dry surfaces and at a minimum ambient or surface temperature of 40 deg F.

B. Perform the painting operations after working hours, on weekends or at such time so as not to interfere with the flow of traffic. Provide temporary barriers to prevent vehicles from driving over newly painted areas.

PART 2 - PRODUCTS

2.1 PAVEMENT MARKINGS

A. Paint: DOT Section 640-2, yellow or white as indicated, or if not indicated as directed. Delete reference to Glass Beads.

B. Source Limitations: Obtain pavement-marking paints from single source from single manufacturer.

2.2 PERFORMANCE REQUIREMENTS

A. Accessibility Standard: Comply with applicable provisions in the latest edition of the Building Code of New York State, Chapter 11.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that pavement-marking substrate is dry and in suitable condition to begin pavement marking in accordance with manufacturer's written instructions.

B. Remove dust, dirt, and other foreign material detrimental to paint adhesion.

C. Mark layout of stripes and lines with chalk or paint.

D. Proceed with pavement marking only after unsatisfactory conditions have been corrected.

3.2 PAVEMENT MARKING

A. Do not apply pavement-marking paint until layout, colors, and placement have been verified by the Director's Representative.

B. Allow asphalt paving or concrete surfaces to age for the minimum duration recommended by the pavement marking manufacturer before starting pavement marking.

A. Apply paint in accordance with DOT Section 640-3.02, except as follows:

1. Delete references to Glass Beads.
2. Apply graphic symbols and lettering with paint-resistant, die-cut stencils, firmly secured to asphalt paving or concrete surface. Mask an extended area beyond edges of each stencil to prevent paint application beyond stencil. Apply paint so that it cannot run beneath stencil.

3.3 PROTECTING AND CLEANING

A. Protect pavement markings from damage and wear during remainder of construction period.

B. Clean spillage and soiling from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

END OF SECTION 321723

SECTION 330110.58 - DISINFECTION OF WATER UTILITY PIPING SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Disinfection of potable water distribution systems.
2. Testing and reporting of results.

1.2 REFERENCE STANDARDS

A. American Water Works Association:

1. AWWA B300 - Hypochlorites.
2. AWWA B302 - Ammonium Sulfate.
3. AWWA B303 - Sodium Chlorite.
4. AWWA C651 - Disinfecting Water Mains.

1.3 SUBMITTALS

A. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Manufacturer’s installation instructions shall be provided along with product data.

C. Submittals shall be provided in the order in which they are specified and tabbed (for combination submittals).

D. Disinfection Procedure:

1. Submit description of procedure to the Director’s Representative for review/approval, including type of disinfectant and calculations indicating quantities of disinfectants required to produce specified chlorine concentration.

E. Product Data: Submit manufacturer information for proposed chemicals and treatment doses.

F. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

G. Certify that final water complies with disinfectant quality standards of the New York State Department of Health.

H. Test and Evaluation Reports: Indicate testing results comparative to specified requirements.

I. Field Quality-Control Submittals: Indicate results of Contractor-furnished tests and inspections.

J. Qualifications Statements:

1. Submit qualifications for manufacturer and applicator.

1.4 CLOSEOUT SUBMITTALS

A. Disinfection Report:

1. Type and form of disinfectant used.
2. Date and time of disinfectant injection start and completion.
3. Test locations.
4. Name of person collecting samples.
5. Initial and 24-hour disinfectant residuals in treated water in ppm for each outlet tested.
6. Date and time of flushing start and completion.
7. Disinfectant residual after flushing in ppm for each outlet tested.

1.5 QUALITY ASSURANCE

A. Perform Work according to AWWA C651. Do not use the Tablet Method therein.

B. Comply with all requirements of the New York State Department of Health for disinfection of potable water lines, valves, hydrants, and appurtenances.

PART 2 - PRODUCTS

2.1 DISINFECTION CHEMICALS

A. Chemicals:

1. Hypochlorite: Comply with AWWA B300.
2. Ammonium Sulfate: Comply with AWWA B302.
3. Sodium Chlorite: Comply with AWWA B303.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that piping system has been cleaned, inspected, and pressure tested prior to disinfection.

B. Verify that access fittings have been installed under Section 331416 - Site Water Utility Distribution Piping.

C. Perform scheduling and disinfecting activity with startup, water pressure testing, adjusting and balancing, and demonstration procedures, including coordination with related systems.

3.2 INSTALLATION

A. Provide required equipment to perform Work of this Section.

B. Introduce treatment into piping system.

C. Maintain disinfectant in system for 24 hours.

D. Flush, circulate, and clean until required disinfectant quality standard has been achieved using municipal domestic water.

E. Replace permanent system devices that were removed for disinfection.

3.3 FIELD QUALITY CONTROL

A. Disinfection, Flushing, and Sampling:

1. Disinfect pipeline installation according to AWWA C651.
2. Use of liquid chlorine is not permitted.
3. Upon completion of retention period required for disinfection, flush pipeline until chlorine concentration in water leaving pipeline is no higher than that generally prevailing in existing system or is acceptable for domestic use.
4. Disposal:

    a. Discharge super chlorinated water in a manner that will not adversely affect plants and animals. Comply with applicable State regulations for waste discharge.
    b. If chlorinated discharge may cause damage to environment, apply neutralizing chemical to chlorinated water to neutralize chlorine residual remaining in water.

5. After final flushing and before pipeline is connected to existing system or placed in service, disinfection, and subsequent bacteriological tests must be completed, and approval must be obtained by the New York State Department of Health.
6. Bacteriological Tests: Coordinate with Director's Representative for sampling criteria and procedures.

    a. Test water main for bacteriological quality before putting pipe into service. A minimum of two successive sets of samples shall be taken at 24-hour intervals. Both sets of samples shall indicate bacteriological safe water and approval must be obtained by the Director's Representative before putting the system in operation. Pay all expenses incurred for testing.
    b. Tests shall be conducted by a laboratory approved by the New York State Department of Health.

7. Give all test results to Director's Representative.

    a. Should test results prove any part of the system bacteriologically unsafe, repeat disinfection procedures until satisfactory results are obtained.
    b. Obtain written approval from the Director's Representative/New York State Department of Health prior to bringing water system online.

END OF SECTION 330110.58

SECTION 331416 - SITE WATER UTILITY DISTRIBUTION PIPING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Pipe and fittings for Site water line, including potable water line.
2. Corporation stop assemblies.
3. Curb Stop assemblies.

B. Related Requirements:

1. Section 221116 – Domestic Water Piping: Product and execution requirements for domestic water piping at building.
2. Section 310000 - Earthwork: Product and execution requirements for excavation and backfill; Execution requirements for trenching.
3. Section 310001 - Earthwork Materials: Soils for backfill in trenches.
4. Section 330110.58 - Disinfection of Water Utility Piping Systems: Flushing and disinfecting of water system.

1.2 REFERENCE STANDARDS

A. American Association of State Highway and Transportation Officials:

1. AASHTO T 180 - Standard Method of Test for Moisture-Density Relations of Soils Using a 10-lb Rammer and a 18-in. Drop.

B. American Society of Mechanical Engineers:

1. ASME B16.1 - Gray Iron Pipe Flanges and Flanged Fittings: Classes 25, 125, and 250.
2. ASME B16.18 - Cast Copper Alloy Solder-Joint Pressure Fittings.
3. ASME B16.22 - Wrought Copper and Copper Alloy Solder-Joint Pressure Fittings.

C. American Society of Sanitary Engineering:

1. ASSE 1012 - Performance Requirements for Backflow Preventers with an Intermediate Atmospheric Vent.
2. ASSE 1013 - Performance Requirements for Reduced Pressure Principle Backflow Preventers and Reduced Pressure Principle Fire Protection Backflow Preventers.

D. ASTM International:

1. ASTM B88 - Standard Specification for Seamless Copper Water Tube.
2. ASTM D698 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12 400 ft-lbf/ft3).

3. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft3).
4. ASTM D6938 - Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth).

E. American Welding Society:

1. AWS A5.8 - Specification for Filler Metals for Brazing and Braze Welding.

F. Manufacturers Standardization Society of the Valve and Fittings Industry:

1. MSS SP-60 - Connecting Flange Joints between Tapping Sleeves and Tapping Valves.

G. NSF International:

1. NSF 61 - Drinking Water System Components - Health Effects.
2. NSF 372 - Drinking Water System Components - Lead Content.

1.3 SUBMITTALS

A. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Manufacturer’s installation instructions shall be provided along with product data.

C. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).

D. Product Data: Submit manufacturer information regarding pipe materials, pipe fittings, valves, and accessories.

E. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

F. Field Quality-Control Submittals: Indicate results of Contractor-furnished tests and inspections.

G. Qualifications Statements:

1. Submit qualifications for manufacturer and installer.

1.4 CLOSEOUT SUBMITTALS

A. Section 017716 - Contract Closeout: Requirements for submittals.

B. Project Record Documents: Record actual locations of piping mains, valves, connections, thrust restraints, and invert elevations.

C. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

1.5 QUALITY ASSURANCE

A. Valves: Mark valve body with manufacturer's name and pressure rating.

B. Materials in Contact with Potable Water: Certified according to NSF 61 and NSF 372.

C. Perform Work according to NYSDOH standards.

D. Maintain copy of each standard affecting Work of this Section on Site.

1.6 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum five years' documented experience.

B. Installer: Company specializing in performing Work of this Section with minimum five years' documented experience in installation of Work of this Section.

C. Installer Qualification Data: Persons engaged with the installation of water utility service main distribution piping and their appurtenances shall have a minimum of 5 years' experience while in the employ of a company or companies engaged in the installation of water service systems for domestic and fire service mains and their appurtenances.

1. Name of each person who will be performing the work.
2. Upon request, furnish names and addresses of the required number of similar project that each person has worked on which meets the qualifications requirements.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Inspection: Accept materials on Site in manufacturer's original packaging and inspect for damage.

B. Storage:

1. Store materials according to manufacturer instructions.
2. Block individual and stockpiled pipe lengths to prevent moving.
3. Do not place pipe or pipe materials on private property or in areas obstructing pedestrian or vehicle traffic.
4. Store PE and PVC materials out of sunlight.

C. Protection:

1. Protect materials from moisture and dust by storing in clean, dry location remote from construction operations areas.
2. Provide additional protection according to manufacturer instructions.

1.8 EXISTING CONDITIONS

A. Field Measurements:

1. Verify field measurements prior to fabrication.
2. Indicate field measurements on Shop Drawings.

PART 2 - PRODUCTS

2.1 PIPING

A. Copper Tubing:

1. Comply with ASTM B88.
2. Type K, annealed.
3. Fittings: ASME B16.18, cast copper or ASME B16.22, wrought copper.
4. Joints: Compression connection or AWS A5.8/A5.8M, BCuP silver braze.

2.2 CORPORATION STOP ASSEMBLIES

A. Manufacturers:

a. A.Y. McDonald Mfg. Co, (563) 583-7311, 4800 Chavenelle Road, Dubuque, IA 52002.
b. Mueller Water Products, (770) 206-4200, 1200 Abernathy Road, NE, Suite 1200, Atlanta, Georgia 30328.
c. Romac Industries Inc., 21919 20th Avenue SE, Suite 100, Bothell, WA, 98021.
d. Smith-Blair, 30 Globe Avenue, Texarkana, AR 71854.
e. Approved equivalent.

B. Corporation Stops:

1. Type: Ground key.
2. Comply with ASTM B62.
3. Body: Brass or red brass alloy.
4. Inlet End: Threaded for tapping according to AWWA C800.
5. Outlet End: Suitable for service pipe specified.

C. Service Saddles:

1. Material: Stainless Steel
2. Type: Full wrap.
3. Working Pressure: Up to 150-psi.

2.3 CURB STOP ASSEMBLIES

A. Manufacturers:

1. A.Y. McDonald Mfg. Co, (563) 583-7311, 4800 Chavenelle Road, Dubuque, IA 52002.
2. Mueller Water Products, (770) 206-4200, 1200 Abernathy Road, NE, Suite 1200, Atlanta, Georgia 30328.

3. Approved equivalent.

B. Curb Stops:

1. Body: Brass or red brass alloy.
2. Comply with ASTM B62.
3. Valve Type: Ball.
4. Sealing: Positive pressure.

C. Curb Boxes and Covers:

1. Body: Cast iron.
2. Type: Extension.
3. Base: Arch pattern.

a. Provide foot piece.

4. Lid:

a. Inscription: WATER.
b. Plug: Pentagonal.

2.4 BACKFLOW PREVENTERS

A. As specified in Section 221119 – Domestic Water Piping Specialties.

2.5 WATER METERS

A. As specified in Section 220519 – Meters and Gauges for Plumbing Piping.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that building service connections and municipal utility water main sizes, locations, and elevations are as indicated on Drawings.

3.2 PREPARATION

A. Cut pipe ends square, ream pipe and tube ends to full pipe diameter, and remove burrs.

B. Remove scale and dirt on inside and outside before assembly.

C. Prepare pipe connections to equipment with flanges or unions.

D. Protect and support existing distribution piping and appurtenances as Work progresses.

3.3 INSTALLATION

A. Bedding:

1. Excavate pipe trench as specified in Section 310000 - Earthwork.
2. Placement:

    a. Place bedding material as specified in Section 310000 – Earthwork.

3. Backfill around sides and to top of pipe as specified in Section 310000 - Earthwork.
4. Place fill materials as specified in Section 310000 - Earthwork.

B. Pipe and Fittings:

1. Maintain separation of water main from sewer piping according to NYSDOH requirements and as indicated on the Drawings.
2. Group piping with other Site piping work whenever practical.
3. Install pipe to elevations indicated on Drawings.
4. Install ductile-iron piping and fittings according to AWWA C600.
5. Route pipe in straight line.
6. Install access fittings to permit disinfection of water system performed under Section 330110.58 - Disinfection of Water Utility Piping Systems.
7. Establish elevations of buried piping with not less than 5 feet of cover.

C. Disinfection: As specified in Section 330110.58 - Disinfection of Water Utility Piping Systems.

D. Corporation Stop Assemblies:

1. Make connection for each different kind of water main, using suitable materials, equipment, and methods as approved by Director’s Representative.
2. Provide service clamps for mains constructed of materials other than cast iron or ductile iron.
3. Location:

    a. Screw corporation stops directly into tapped and threaded iron main at 10- and 2-o'clock positions along main's circumference.
    b. Locate and stagger corporation stops at least 12 inches apart longitudinally.

4. Plastic Pipe Mains:

    a. Provide full support for service clamp for full circumference of pipe, with minimum 2-inch width of bearing area.
    b. Exercise care against crushing or causing other damage to mains at time of tapping or installation of service clamp or corporation stop.

5. Use seals or other devices such that no leaks are present in mains at points of tapping.
6. Do not backfill and cover service connections until installation has been approved by Director’s Representative.

E. Curb Stop Assemblies:

1. Set curb stops on solid bearing.
2. Boxes:

    a. Center and plumb curb boxes over curb stops.
    b. Set box cover flush with finished grade.

F. Service Connections:

1. Install water service to within 5 feet of building and connect to building water service.
2. Metal Sleeve:

    a. Install metal sleeve surrounding service main to 6 inches above floor slab, and minimum 6 feet below grade.
    b. Size: Accommodate minimum 2 inches of insulation.

G. Installation Standards: Install Work according to NYSDOH requirements.

3.4 TOLERANCES

A. Install pipe within tolerance of 5/8 inch.

3.5 FIELD QUALITY CONTROL

A. Testing:

1. Perform pressure test on piping according to NYSDOH standards.

2. Provide all testing results to the Director's Representative.

END OF SECTION 331416

SECTION 333100 - SANITARY SEWERAGE PIPING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Sanitary sewerage piping.

B. Related Requirements:

1. Section 221316 - Facility Sanitary Sewerage: Product and execution requirements for sanitary waste and vent piping at building.
2. Section 310001 - Earthwork Materials: Soil for bedding and backfill in trenches.
3. Section 310000 - Earthwork: Requirements for excavation, trenching, and backfill as required by this Section.

1.2 DEFINITIONS

A. Bedding: Fill placed under, beside, and directly over pipe, prior to subsequent backfill operations.

1.3 REFERENCE STANDARDS

A. American Association of State Highway and Transportation Officials:

1. AASHTO T 180 - Standard Method of Test for Moisture-Density Relations of Soils Using a 10-lb Rammer and a 18-in. Drop.

B. American Water Works Association:

1. AWWA C104 - Cement-Mortar Lining for Ductile-Iron Pipe and Fittings.
2. AWWA C105 - Polyethylene Encasement for Ductile-Iron Pipe Systems.
3. AWWA C110 - Ductile-Iron and Gray-Iron Fittings.
4. AWWA C111 - Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings.
5. AWWA C150 - Thickness Design of Ductile-Iron Pipe.
6. AWWA C151 - Ductile-Iron Pipe, Centrifugally Cast.
7. AWWA C153 - Ductile-Iron Compact Fittings.

C. ASTM International:

1. ASTM A74 - Standard Specification for Cast Iron Soil Pipe and Fittings.
2. ASTM C14 - Standard Specification for Nonreinforced Concrete Sewer, Storm Drain, and Culvert Pipe.
3. ASTM C76 - Standard Specification for Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe.

4. ASTM C443 - Standard Specification for Joints for Concrete Pipe and Manholes, Using Rubber Gaskets.
5. ASTM C564 - Standard Specification for Rubber Gaskets for Cast Iron Soil Pipe and Fittings.
6. ASTM C923 - Standard Specification for Resilient Connectors Between Reinforced Concrete Manhole Structures, Pipes, and Laterals.
7. ASTM D698 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft3).
8. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft3).
9. ASTM D1785 - Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120.
10. ASTM D2321 - Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications.
11. ASTM D2466 - Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40.
12. ASTM D2564 - Standard Specification for Solvent Cements for Poly(Vinyl Chloride) (PVC) Plastic Piping Systems.
13. ASTM D2729 - Standard Specification for Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings.
14. ASTM D2855 - Standard Practice for Making Solvent-Cemented Joints with Poly(Vinyl Chloride) (PVC) Pipe and Fittings.
15. ASTM D3034 - Standard Specification for Type PSM Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings.
16. ASTM D6938 - Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth).
17. ASTM F477 - Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe.

1.4 COORDINATION

A. Coordinate Work of this Section with termination of sanitary sewer connection outside building, connection to municipal sewer utility service and trenching.

1.5 SUBMITTALS

A. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Manufacturer’s installation instructions shall be provided along with product data.

C. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).

D. Product Data: Submit manufacturer information indicating pipe material to be used, pipe accessories.

E. Submit an Environmental Product Declaration (EPD) from the manufacturer for reinforced concrete pipe within this specification section, if available. A statement of the contractor's good faith effort to obtain the EPD shall be provided if not available.

1. Manufacturer-provided EPDs must be Product Specific Type III (Third-Party Reviewed), in adherence with ISO 14025 *Environmental labels and declarations*, ISO 14044 *Environmental management – Life cycle assessment*, and ISO 21930 *Core rules for environmental product declarations of construction products and services.*

F. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

G. Source Quality-Control Submittals: Indicate results of shop tests and inspections.

H. Field Quality-Control Submittals: Indicate results of Contractor-furnished tests and inspections.

I. Qualifications Statement:

1. Submit qualifications for manufacturer and installer.

1.6 CLOSEOUT SUBMITTALS

A. Section 017716 - Contract Closeout: Requirements for submittals.

B. Project Record Documents: Record finished locations of pipe runs, connections, manholes, cleanouts, and invert elevations.

C. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

1.7 QUALITY ASSURANCE

A. Maintain copy of each standard affecting Work of this Section on Site.

1.8 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum three years' documented experience.

B. Installer: Company specializing in performing Work of this Section with minimum three years' documented experience and approved by manufacturer.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Section 016500 - Materials and Equipment: Requirements for transporting, handling, storing, and protecting products.

B. Inspection: Accept materials on Site in manufacturer's original packaging and inspect for damage.

C. Storage:

1. Store materials according to manufacturer instructions.
2. Store valves in shipping containers with labeling in place.

D. Protection:

1. Protect materials from moisture and dust by storing in clean, dry location remote from construction operations areas.
2. Block individual and stockpiled pipe lengths to prevent moving.
3. Provide additional protection according to manufacturer instructions.

1.10 EXISTING CONDITIONS

A. Field Measurements:

1. Verify field measurements prior to fabrication.
2. Indicate field measurements on Shop Drawings.

PART 2 - PRODUCTS

2.1 SANITARY SEWERAGE PIPING

A. Plastic Pipe:

1. Material: PVC.
2. Comply with ASTM D3034, SDR-35.
3. Inside Nominal Diameter: 4 inches,
4. End Connections: Bell and spigot with rubber-ring-sealed gasket joint.
5. Fittings: PVC.
6. Joints:

a. Elastomeric gaskets.
b. Comply with ASTM F477.

2.2 FLEXIBLE COUPLINGS

A. Manufacturers:

1. Fernco Inc., (810) 503-9000, 300 South Dayton St., Davidson, MI 48423.
2. Romac Industries, Inc., (800) 426-9341, 21919 20th Ave. SE, Suite 100, Bothell, WA 98021.
3. Approved equivalent.

B. Description:

1. Material: Resilient, chemical-resistant, elastomeric PVC.
2. Attachment: Two Series-300 stainless-steel clamps, screws, and housings.

2.3 FLEXIBLE PIPE BOOTS FOR MANHOLE PIPE ENTRANCES

A. Manufacturers:

1. A-Lok, 697 Main St., (800) 822-2565, Tullytown PA 19007.
2. Press-Seal Corporation, (800) 822-2565, 2424 West State Blvd, Fort Wayne IN, 46808.
3. Approved equivalent.

B. Description:

1. Material: EPDM.
2. Comply with ASTM C923.
3. Attachment: Series-300 stainless-steel clamp and hardware.

2.4 SOURCE QUALITY CONTROL

A. Provide shop inspection and testing of pipe.

B. Director’s Inspection:

1. Make completed pipe sections available for inspection at manufacturer’s factory prior to packaging for shipment.
2. Notify Director’s Representative at least seven days before inspection is allowed.

C. Director’s Witnessing:

1. Allow witnessing of factory inspections and tests at manufacturer's test facility.
2. Notify Director’s Representative at least seven days before inspections and tests are scheduled.

D. Certificate of Compliance:

1. If manufacturer is approved by authorities having jurisdiction, submit certificate of compliance indicating Work performed at manufacturer's facility conforms to Contract Documents.
2. Specified shop tests are not required for Work performed by approved manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that excavation base is ready to receive Work of this Section.

B. Verify that excavations, dimensions, and elevations are as indicated on Drawings.

3.2 PREPARATION

A. Correct over-excavation with fine aggregate.

B. Remove large stones or other hard materials that could damage pipe or impede consistent backfilling or compaction.

C. Protect and support existing sewer lines, utilities, and appurtenances.

D. Utilities:

1. Maintain profiles of utilities.
2. Coordinate with other utilities to eliminate interference.
3. Notify Director's Representative if crossing conflicts occur.

3.3 INSTALLATION

A. Bedding:

1. Excavate pipe trench as specified in Section 310000 - Earthwork.
2. Place bedding material at trench bottom.
3. Level materials in continuous layer not exceeding 6 inches.
4. Maintain optimum moisture content of bedding material to attain required compaction density.

B. Piping:

1. Install pipe, fittings, and accessories according to ASTM D2321, and seal joints watertight.
2. Lay pipe to slope gradients as indicated on Drawings.
3. Begin at downstream end of system and progress upstream.
4. Bedding: Install at sides and over top of pipe, to minimum compacted thickness of 12 inches.
5. Bedding: As indicated on Drawings.
6. Lay bell-and-spigot pipe with bells upstream.
7. Backfill and compact as specified in Section 310000 - Earthwork.
8. Do not displace or damage pipe when compacting.
9. Connect to building sanitary sewer outlet through installed sleeves.
10. Install Site sanitary sewage system piping to within 5 feet of building, and connect to building sanitary waste system as specified in Section 221300 - Facility Sanitary Sewerage.

C. Backfilling: As specified in Section 310000 - Earthwork.

3.4 TOLERANCES

A. Maximum Variation from Indicated Slope: 1/8 inch in 10 feet.

3.5 FIELD QUALITY CONTROL

A. Request inspection by Director's Representative prior to and immediately after placing bedding.

B. Testing:

1. If tests indicate that Work does not meet specified requirements, remove Work, replace, and retest. Coordinate with Director's Representative.
2. Lamping:

    a. Lamp gravity piping after flushing and cleaning.
    b. Perform lamping operation by shining light at one end of each pipe section between manholes.
    c. Observe light at other end.
    d. Pipe not installed with uniform line and grade will be rejected.
    e. Remove and reinstall rejected pipe sections.
    f. Clean and lamp until pipe section is installed to uniform line and grade.

3.6 PROTECTION

A. Protect pipe and aggregate cover from damage or displacement until backfilling operation is in progress.

B. Cap open ends of piping during periods of Work stoppage.

END OF SECTION 333100

SECTION 333123 - SANITARY SEWERAGE FORCE MAIN PIPING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Force mains.

B. Related Requirements:

1. Section 310001 – Earthwork Materials: Soil backfill from above pipe to finish grade.
2. Section 310000 – Earthwork: Excavation, backfill, and compaction.

1.2 REFERENCE STANDARDS

A. American Association of State Highway and Transportation Officials:

1. AASHTO T 180 - Standard Method of Test for Moisture-Density Relations of Soils Using a 10-lb Rammer and a 18-in. Drop.

B. ASTM International:

1. ASTM D698 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft3).
2. ASTM D1785 - Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120
3. ASTM D2467 - Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80.

1.3 COORDINATION

A. Coordinate Work of this Section with connection to existing on site sanitary manhole.

1.4 PREINSTALLATION MEETINGS

A. Convene minimum one week prior to commencing Work of this Section.

1.5 SUBMITTALS

A. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Manufacturer’s installation instructions shall be provided along with product data.

C. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).

D. Product Data: Submit manufacturer information indicating pipe material used, pipe accessories, valves.

E. Shop Drawings:

1. Indicate piping piece numbers and locations.
2. Indicate restrained joint locations.

F. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

G. Delegated Design Submittals: Shop Drawings with design calculations and assumptions for restrained joints, including establishing lengths of restrained joint piping required. Shop Drawings shall be signed and sealed by a professional engineer licensed in the State of New York.

H. Manufacturer Instructions: Submit special procedures required to install specified products.

I. Field Quality-Control Submittals: Indicate results of Contractor-furnished tests and inspections.

J. Qualifications Statement:

1. Submit qualifications for manufacturer, installer, and licensed professional.

1.6 CLOSEOUT SUBMITTALS

A. Section 017716 - Contract Closeout: Requirements for submittals.

B. Project Record Documents: Record invert elevations and actual locations of pipe runs and connections.

C. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

1.7 QUALITY ASSURANCE

A. Maintain copy of each standard affecting Work of this Section on Site.

1.8 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum three years' documented experience.

B. Installer: Company specializing in performing Work of this Section with minimum three years' documented experience.

C. Licensed Professional: Professional Engineer experienced in design of specified Work and licensed in the State of New York.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Section 016500 - Materials and Equipment: Requirements for transporting, handling, storing, and protecting products.

B. Inspection: Accept materials on Site in manufacturer's original packaging and inspect for damage.

C. Storage:

1. Store materials according to manufacturer instructions.
2. Do not place materials on private property without written permission of property Director's Representative.
3. Do not stack pipe higher than recommended by pipe manufacturer.

D. Protection:

1. Protect materials from moisture and dust by storing in clean, dry location remote from construction operations areas.
2. Store gaskets for mechanical and push-on joints in cool and dry location, out of direct sunlight, and not in contact with petroleum products.
3. Provide additional protection according to manufacturer instructions.

1.10 EXISTING CONDITIONS

A. Field Measurements:

1. Verify field measurements prior to fabrication.
2. Indicate field measurements on Shop Drawings.

PART 2 - PRODUCTS

2.1 HDPE PIPE

A. PVC Pressure Sewer Pipe and Fittings, 12-Inch Nominal Size and Smaller:

1. Comply with ASTM D1785.
2. Schedule 80.
3. Fittings: Comply with ASTM D2467.

B. Bedding and Cover:

1. Bedding: As specified in Section 310001 – Earthwork Materials.
2. Soil Backfill from above Pipe to Finish Grade: As specified in Section 310001 – Earthwork Materials.

3. Subsoil: No rocks more than 6 inches in diameter, frozen earth, or foreign matter.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that excavation base is ready to receive Work.

B. Verify that excavations, dimensions, and elevations are as indicated on Drawings.

3.2 PREPARATION

A. Correct over-excavation with fine aggregate.

B. Remove large stones or other hard matter capable of damaging pipe or of impeding consistent backfilling or compaction.

3.3 INSTALLATION

A. Bedding:

1. Excavate pipe trench as specified in Section 310000 - Earthwork.
2. Place bedding material at trench bottom.
3. Level materials in continuous layers not exceeding 6 inches in depth.
4. Maintain optimum moisture content of bedding material to attain required compaction density.

B. Piping:

1. Install pipe, fittings, and accessories as indicated on Drawings.
2. Route piping in straight line.
3. Install bedding at sides and over top of pipe to minimum compacted thickness of 12 inches.
4. Backfilling and Compacting:

    a. As specified in Section 310000 - Earthwork.
    b. Do not displace or damage pipe while compacting.

5. Connect to existing on site sewer system.

3.4 FIELD QUALITY CONTROL

A. Inspections: Request inspection by Director’s Representative prior to and immediately after placing bedding.

B. Pressure Testing:

1. Pressure:

    a. Not less than 1.5 times the design working pressure.
    b. Maintain pressure within plus or minus 5 psi of test pressure.

2. Time: A minimum of 2 hours.
3. Initial Procedure:

    a. Install corporation cocks at high points.
    b. Slowly fill section to be tested with water, expelling air from piping at high points from air vents and by opening corporation cocks.
    c. Close air vents and corporation cocks after air is expelled.
    d. Raise pressure to specified test pressure.

4. Testing:

    a. Observe joints, fittings, and valves under test.
    b. Remove and replace cracked pipes, joints, fittings, and valves showing visible leakage.
    c. Correct visible deficiencies and continue testing at same test pressure for additional two hours to determine leakage rate.
    d. Coordinate repairs with the Director's Representative.

5. Leakage:

    a. Leakage is defined as quantity of water supplied to piping necessary to maintain test pressure during period of test.
    b. Maximum Allowable Leakage:

        1) L = SD x sqrt(P)/C.
        2) L = testing allowance, gph.
        3) S = length of pipe tested, feet.
        4) D = nominal diameter of pipe, inches.
        5) P = average test pressure during hydrostatic test, psig.
        6) C = 148,000.

    c. If pipe under test contains sections of various diameters, calculate allowable leakage from sum of computed leakage for each size.
    d. If test of pipe indicates leakage greater than allowed, locate source of leakage, make corrections, and retest until leakage is within allowable limits.
    e. Correct visible leaks regardless of quantity of leakage.
    f. Coordinate repairs with the Director's Representative.

C. Compaction Testing:

1. Comply with Section 310000 - Earthwork.

3.5 PROTECTION

A. Protect pipe and aggregate cover from damage or displacement until backfilling operation is in progress.

END OF SECTION 333123

SECTION 333216 - PACKAGED WASTEWATER GRINDER PUMP ASSEMBLIES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Grinder pumps.
2. FRP basins.
3. Pump control systems.

B. Related Requirements:

1. Section 033000 - Cast-in-Place Concrete: Requirements for anti-flotation collar.
2. Section 310001 - Earthwork Materials: Basin bedding, ballast, and backfill materials.
3. Section 310000 - Earthwork: Excavation requirements.
4. Section 333216 – Sanitary Sewerage Force Main Piping.

1.2 DEFINITIONS

A. FRP: Fiberglass-reinforced plastic.

1.3 REFERENCE STANDARDS

A. American Bearing Manufacturers Association:

1. ABMA 9 - Load Ratings and Fatigue Life for Ball Bearings.

B. ASTM International:

1. ASTM A53 - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless.
1. ASTM D1785 - Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120
2. ASTM D2467 - Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80.

C. National Electrical Manufacturers Association:

1. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum).

1.4 PREINSTALLATION MEETINGS

A. Convene minimum one week prior to commencing Work of this Section.

1.5 SUBMITTALS

B. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

C. Manufacturer’s installation instructions shall be provided along with product data.

D. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).

E. Product Data: Submit manufacturer information concerning materials of construction and fabrication.

F. Shop Drawings: Indicate detailed dimensions for materials and equipment, including pump basins, pumps, piping, controls including wiring schematics, and accessories.

G. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

H. Manufacturer Instructions: Submit detailed instructions on installation requirements, including storage and handling procedures, anchoring, and layout.

I. Field Quality-Control Submittals: Indicate results of Contractor-furnished tests and inspections.

J. Manufacturer Reports: Certify that equipment has been installed according to manufacturer instructions.

K. Qualifications Statements:

1. Submit qualifications for manufacturer and installer.
2. Submit manufacturer's approval of installer.

1.5 CLOSEOUT SUBMITTALS

A. Section 017716 - Contract Closeout: Requirements for submittals.

B. Project Record Documents: Record actual locations and final orientation of equipment and accessories.

1.6 QUALITY ASSURANCE

A. Maintain copies of each standard affecting Work of this Section on Site.

1.7 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum three years' experience.

B. Installer: Company specializing in performing Work of this Section with minimum three years' experience and approved by manufacturer.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Section 016500 - Materials and Equipment: Requirements for transporting, handling, storing, and protecting products.

B. Inspection: Accept materials on Site in manufacturer's original packaging and inspect for damage.

C. Handling:

1. Handle materials to prevent damage to interior or exterior surfaces.
2. Prepare pumps and accessories for shipment in such a manner as to prevent entry of foreign matter into product body.

D. Storage:

1. Store materials according to manufacturer instructions.
2. Store products in areas protected from weather, moisture, or possible damage.
3. Do not store products directly on ground.

E. Protection:

1. Protect materials from moisture and dust by storing in clean, dry location remote from construction operations areas.
2. Provide additional protection according to manufacturer instructions.

1.9 EXISTING CONDITIONS

A. Field Measurements:

1. Verify field measurements prior to fabrication.
2. Indicate field measurements on Shop Drawings.

PART 2 - PRODUCTS

2.1 CENTRIFUGAL GRINDER PUMPS

A. Manufacturers:

a. Goulds Water Technology, (315) 239-2499, 2881 East Bayard St. Ext., Seneca Falls, NY 13148.
b. Zoeller Company, (502) 778-2731, 3649 Cane Run Rd., Louisville, KY 40211.
c. Approved equivalent.

B. Description:

1. Submersible grinder sewage pumps.
2. Field serviceable.

C. Materials:

1. Pump Case, Motor Housing, and Bearing Housing: Cast iron.
2. Motor and Pump Shafts: Integral stainless steel or steel.
3. Hardware: Stainless steel.

D. Impeller:

1. Capable of passing minimum 3-inch- diameter sphere.
2. Type: Nonclog.
3. Material: Bronze, cast iron, or engineered plastic.
4. Dynamically balanced.
5. Impeller Wearing Surface: Cast-polymer material designed for corrosion and wear resistance.

E. Cutter Assembly:

1. Description:

   a. Rotating type.
   b. Stationary hardened stainless-steel shredding ring spaced in close annular alignment to driven impeller assembly.
   c. Two hardened stainless-steel cutter bars.
   d. Cutters capable of being reversed to provide sharp, unused cutting edges when original edges become dull.
   e. Cutter assembly removable without dismantling pump.

2. Positioned immediately below pumping element.
3. Direct driven by motor shaft.

2.2 PUMP DISCHARGE PIPING

A. Description:

1. Diameter: As indicated on Drawings.
2. End Connections: Comply with ASTM D2467.

B. Material:

1. Galvanized steel.
2. Comply with ASTM A53, Grade B.
3. Type: Seamless.
4. Schedule: 80.

C. Valves:

1. Gate:

   a. Furnish in each pump discharge line, with stem extension as required for access.
   b. End Connections: Threaded.

c. Body: Bronze.
d. Stem: Nonrising.
e. Disc: Wedge type.
f. Bonnet: Union.
g. Stem Seal and Bonnet O-Ring: PTFE.

2. Check:

a. Type: Combination, horizontal, spring loaded.
b. Body: Iron.
c. Coupling: Hydraulically sealed.
d. Mounting: Bronze.
e. Pin and Spring: Stainless steel.
f. Disc: Renewable.

2.3 PUMP BASIN

A. Basin:

1. Material: Fiberglass-reinforced polyester resin.
2. Nominal Wall Thickness: Per Manufacturer.

B. Anti-Flotation Ring:

1. Formed integral with basin.
2. Concrete: As specified in Section 033000 - Cast-in-Place Concrete.

C. Cover:

1. Material: Fiberglass-reinforced polyester resin.
2. Attachment: Bolted and gasketed.

D. Inlet: Integrally formed or cast-iron calking-type hub or plastic pipe adapter fastened to basin with stainless-steel hardware.

2.4 OPERATION

A. Electrical Characteristics:

1. 1/2 HP
2. Voltage: 115 V, single phase, 60 Hz.

B. Motors:

1. Type: Sealed submersible.
2. Windings: Open type, operating in dielectric oil.
3. Motor Leads: Pot in epoxy compound to form leakproof seal.
4. Shaft Seals:

a. Tandem carbon/ceramic mechanical type, with oil chamber between seals.
b. Mount electrode between seals to detect water leaking into seal chamber and to actuate light on control panel.

5. Bearings:

a. Upper and lower ball bearings to support rotor.
b. Comply with ABMA 9.
c. Lower bronze sleeve or ball bearing to take radial loads from impeller.
d. Minimum L-10 Life: 15,000 hours.

C. Control Panel:

1. Factory mounted.
2. NEMA 250 Type 4X.
3. Single-point power connection and grounding lug.
4. Circuit breaker and magnetic contactor with overload protection and reset button.
5. Terminal Strips: Controls, pumps, and alarms.
6. Circuit lightning protection.
7. Wire control circuits completely separate from power circuits.
8. Elapsed Time Meter: Nonresettable, to record run time to 99,999.9 hours.
9. High-Level Alarm Flashing Indicator Light:

a. Panel mounted.
b. Power: 100 W.
c. Provide guard.

D. Liquid-Level Controls:

1. Description: Float-type switches sealed in shock-resistant solid polyurethane float to control basin liquid level and to signal HIGH-LEVEL alarm.
2. Electrical Cords: Heavy neoprene-jacketed weighted cords, suspended from NEMA 250 Type 4X junction box.
3. Level Setting: Adjustable from top of basin.
4. Switches:

a. Operation: Three switches: one for PUMP START, one for PUMP STOP, and one for HIGH-LEVEL alarm.

E. Disconnect Switch: Factory mounted in control panel.

F. Operation Sequences:

1. Control Sequence:

a. When basin liquid level increases to PUMP START setting, PUMP START switch energizes lead pump.
b. When basin liquid level decreases to PUMP STOP setting, PUMP STOP switch de-energizes lead pump.
c. When lead pump is de-energized, alternating relay indexes such that lag pump starts on next rise in basin liquid level.

d. When basin liquid level decreases to PUMP STOP setting, PUMP STOP switch de-energizes both pumps.
e. If basin liquid level continues to rise, HIGH-LEVEL alarm switch energizes alarm signal when liquid level reaches HIGH-LEVEL setting.

2.5 ACCESSORIES

A. Pump Guide Rails:

1. Material: Type 304 stainless steel.
2. Diameter: Manufacturer's standard for pump size, but not less than 1 inch.

B. Top and Bottom Pilots: Stainless steel.

C. Pump Guides and Guide Rail Supports: Stainless steel.

D. Pump-Lifting Cable: Stainless steel.

E. Fasteners and Hardware: Type 316 stainless steel.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify layout and orientation of pumps, accessories, and piping connections.

3.2 INSTALLATION

A. Coordinate final location of pump control panel with Director’s Representative.

B. Excavation: As specified in Section 310000 – Earthwork.

C. Install pump units and accessories where indicated on Drawings and according to manufacturer's instructions.

D. Backfill: As specified in Section 310000 - Earthwork.

E. Provide and connect piping, accessories, and power and control conduit and wiring to make system operational and ready for startup.

F. Flush piping with clean water.

3.3 FIELD QUALITY CONTROL

A. Inspection: Check and adjust liquid-level control and alarm settings.

B. Startup and Performance Testing:

1. Test each unit on clear water through minimum of four complete cycles under supervision of manufacturer's representative and in presence of the Director’s Representative.
2. Demonstrate that system performance, control functions, and alarms meet specified requirements.
3. Hydrostatically test system piping for leaks.

C. Manufacturer Services: Furnish services of manufacturer's representative experienced in installation of products to be placed under this Section for not less than 2 days on-Site for installation, inspection, field testing, startup, and instructing Facility personnel in maintenance of equipment. Coordinate with Director’s Representative.

D. Equipment Acceptance:

1. Adjust, repair, modify, or replace components failing to perform as specified and rerun tests.
2. Make final adjustments to equipment under direction of manufacturer's representative. Coordinate with Director’s Representative.

E. Furnish installation certificate from equipment manufacturer's representative attesting that equipment has been properly installed and is ready for startup and testing.

3.4 DEMONSTRATION

A. Demonstrate equipment startup, shutdown, routine maintenance, alarm condition responses, and emergency repair procedures to Facility personnel. Coordinate with Director’s Representative.

3.5 PROTECTION

A. Conduct operations as to not interfere with, interrupt, damage, destroy, or endanger integrity of surface structures or utilities in immediate or adjacent areas to the Work.

END OF SECTION 333216

SECTION 334200 - STORMWATER CONVEYANCE

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. Pipe and fittings.
2. Non-pressure transition couplings.
3. Cleanouts.

1.3 SUBMITTALS

A. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Manufacturer's installation instructions shall be provided along with product data.

C. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).

D. Product Data: For each type of product.

E. Submit an Environmental Product Declaration (EPD) from the manufacturer for steel pipe, concrete pipe, and each type of precast structure within this specification section, if available. A statement of the contractor's good faith effort to obtain the EPD shall be provided if not available.

1. Manufacturer-provided EPDs must be Product Specific Type III (Third-Party Reviewed), in adherence with ISO 14025 *Environmental labels and declarations*, ISO 14044 *Environmental management – Life cycle assessment*, and ISO 21930 *Core rules for environmental product declarations of construction products and services.*

F. Field quality-control reports.

1.4 QUALITY ASSURANCE

A. Piping materials shall bear label, stamp, or other markings of specified testing agency.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Do not store plastic pipe, and fittings in direct sunlight.

B. Protect pipe, pipe fittings, and seals from dirt and damage.

1.6 FIELD CONDITIONS

A. Interruption of Existing Storm Drainage Service: Do not interrupt service to facilities occupied by State or others unless permitted under the following conditions and then only after arranging to provide temporary service in accordance with requirements indicated:

1. Notify Director's Representative no fewer than two days in advance of proposed interruption of service.
2. Do not proceed with interruption of service without Director's Representative written permission.

PART 2 - PRODUCTS

2.1 CORRUGATED-PE PIPE AND FITTINGS

A. Source Limitations: Obtain corrugated-PE pipe and fittings from single manufacturer.

B. Corrugated-PE Drainage Pipe and Fittings NPS 3 to NPS 10: AASHTO M 252, Type S, with smooth waterway for coupling joints.

C. Corrugated-PE Soiltight Couplings: AASHTO M 294, corrugated, matching pipe and fittings.

D. Corrugated-PE Watertight Couplings: AASHTO M 294, corrugated, matching pipe and fittings.

2.2 PERFORATED – WALL PIPES AND FITTINGS

A. Perforated PE Pipe and Fittings:

1. NPS 6 and Smaller: ASTM F405 or AASHTO M 252, Type CP; corrugated, for coupled joints.
2. NPS 8 and Larger: ASTM F667; AASHTO M 252, Type CP; or AASHTO M 294, Type CP; corrugated; for coupled joints.
3. Couplings: Manufacturer's standard, band type.

2.3 NONPRESSURE TRANSITION COUPLINGS

A. Comply with ASTM C1173, elastomeric, sleeve-type, reducing or transition coupling, for joining underground nonpressure piping. Include ends of same sizes as piping to be joined, and corrosion-resistant-metal tension band and tightening mechanism on each end.

B. Sleeve Materials:

1. For Plastic Pipes: ASTM F477, elastomeric seal or ASTM D5926, PVC.
2. For Dissimilar Pipes: ASTM D5926, PVC or other material compatible with pipe materials being joined.

C. Unshielded, Flexible Couplings:

1. Source Limitations: Obtain unshielded, flexible couplings from single manufacturer.
2. Description: Elastomeric sleeve with stainless-steel shear ring and corrosion-resistant-metal tension band and tightening mechanism on each end.

D. Ring-Type, Flexible Couplings:

1. Source Limitations: Obtain ring-type, flexible couplings from single manufacturer.
2. Description: Elastomeric compression seal with dimensions to fit inside bell of larger pipe and for spigot of smaller pipe to fit inside ring.

2.4 CLEANOUTS

A. HDPE Cleanouts:

1. Source Limitations: Obtain HDPE cleanouts from single manufacturer.
2. Description: HDPE body with HDPE threaded plug. Include HDPE sewer pipe fitting and riser to clean out of same material as sewer piping.

B. Cleanout Lids and Frames:

1. Manufacturers:

a. Neenah Foundry Company, P. O. Box 729, Neenah, WI 54957, (414) 729-3661
b. East Jordan Iron Works, P.O. Box 190, South Bay Rd., Cicero, NY 13039, (315) 699-2601
c. Josam Company, 525 West Highway 20, Michigan City, IN 46360, (800) 365-6726.
d. Approved equivalent.

2. Materials: Cast iron.
3. Nominal Lid and Frame Size: 6 inches diameter.

C. Concrete Collar

1. Material: Cast-in-place concrete, as specified in Section 033000 - Cast-in-Place Concrete.

PART 3 - EXECUTION

3.1 EARTHWORK

A. Excavation, trenching, and backfilling are specified in Section 310000 - Earthwork.

3.2 PIPING INSTALLATION

A. General Locations and Arrangements: Drawing plans and details indicate general location and arrangement of underground storm drainage piping. Location and arrangement of piping layout take into account design considerations. Install piping as indicated, to extent practical. Where specific installation is not indicated, follow piping manufacturer's written instructions.

B. Install piping beginning at low point, true to grades and alignment indicated with unbroken continuity of invert. Place bell ends of piping facing upstream. Install gaskets, seals, sleeves, and couplings in accordance with manufacturer's written instructions for use of lubricants, cements, and other installation requirements.

1. Perforated Pipe: Lay perforated pipe with perforations down.

C. Install manholes for changes in direction unless fittings are indicated. Use fittings for branch connections unless direct tap into existing sewer is indicated.

D. Install proper size increasers, reducers, and couplings where different sizes or materials of pipes and fittings are connected. Reducing size of piping in direction of flow is prohibited.

E. When installing pipe under streets or other obstructions that cannot be disturbed, use pipe-jacking process of microtunneling.

F. Install gravity-flow, nonpressure drainage piping in accordance with the following:

1. Install piping pitched down in direction of flow.
2. Install piping NPS 6 and larger with restrained joints at tee fittings and at changes in direction. Use corrosion-resistant rods, pipe or fitting manufacturer's proprietary restraint system, or cast-in-place concrete supports or anchors.
3. Install piping with 36-inch-minimum cover.
4. Install PE corrugated sewer piping in accordance with ASTM D2321.

3.3 PIPE JOINT CONSTRUCTION

A. Join gravity-flow, nonpressure drainage piping in accordance with the following:

1. Join corrugated-PE piping in accordance with ASTM D3212 for push-on joints.
2. Join dissimilar pipe materials with nonpressure-type flexible couplings.

3.4 CLEANOUT INSTALLATION

A. Install cleanouts and riser extensions from sewer pipes to cleanouts at grade. Use cast-iron soil pipe fittings in sewer pipes at branches for cleanouts and cast-iron soil pipe for riser extensions to cleanouts. Install piping so cleanouts open in direction of flow in sewer pipe.

1. Use Light-Duty, top-loading classification cleanouts in earth or unpaved foot-traffic areas.
2. Use Medium-Duty, top-loading classification cleanouts in paved foot-traffic areas.
3. Use Heavy-Duty, top-loading classification cleanouts in vehicle-traffic service areas.
4. Use Extra-Heavy-Duty, top-loading classification cleanouts in roads.

B. Set cleanout frames and covers in concrete pavement and roads with tops flush with pavement surface.

3.5 CONCRETE PLACEMENT

A. Place cast-in-place concrete in accordance with ACI 318.

3.6 CONNECTIONS

A. Make connections to existing piping and underground manholes.

1. Use commercially manufactured wye fittings for piping branch connections. Remove section of existing pipe; install wye fitting into existing piping; and encase entire wye fitting, plus 6-inch overlap, with not less than 6 inches of concrete with 28-day compressive strength of 3000 psi.
2. Make branch connections from side into existing piping, NPS 21 or larger, or to underground manholes and structures by cutting into existing unit and creating an opening large enough to allow 3 inches of concrete to be packed around entering connection. Cut end of connection pipe passing through pipe or structure wall to conform to shape of and be flush with inside wall unless otherwise indicated. On outside of pipe, manhole, or structure wall, encase entering connection in 6 inches of concrete for minimum length of 12 inches to provide additional support of collar from connection to undisturbed ground.

    a. Use concrete that will attain a minimum 28-day compressive strength of 3000 psi unless otherwise indicated.
    b. Use epoxy-bonding compound as interface between new and existing concrete and piping materials.

3. Protect existing piping, manholes, and structures to prevent concrete or debris from entering while making tap connections. Remove debris or other extraneous material that may accumulate.

B. Pipe couplings may be used in applications below unless otherwise indicated.

1. Use nonpressure-type flexible couplings where required to join gravity-flow, nonpressure sewer piping unless otherwise indicated.

    a. Unshielded flexible couplings for same or minor difference OD pipes.
    b. Unshielded, increaser/reducer-pattern, flexible couplings for pipes with different OD.
    c. Ring-type flexible couplings for piping of different sizes where annular space between smaller piping's OD and larger piping's ID permits installation.

3.7 IDENTIFICATION

A. Materials and their installation are specified in Section 310000 - Earthwork. Arrange for installation of green warning tape directly over piping and at outside edge of underground structures.

1. Use detectable warning tape over nonferrous piping and over edges of underground structures.

3.8 FIELD QUALITY CONTROL

A. Inspect interior of piping to determine whether line displacement or other damage has occurred. Inspect after approximately 24 inches of backfill is in place, and again at completion of Project.

1. Submit separate reports for each system inspection.
2. Defects requiring correction include the following:

    a. Alignment: Less than full diameter of inside of pipe is visible between structures.
    b. Damage: Crushed, broken, cracked, or otherwise damaged piping.

3. Replace defective piping using new materials, and repeat inspections until defects are within allowances specified.
4. Reinspect and repeat procedure until results are satisfactory.

B. Test new piping systems, and parts of existing systems that have been altered, extended, or repaired, for defects.

1. Do not enclose, cover, or put into service before inspection and approval.
2. Test completed piping systems in accordance with requirements of authorities having jurisdiction.
3. Schedule tests and inspections by authorities having jurisdiction with at least 24 hours' advance notice.
4. Submit separate report for each test.

3.9 CLEANING

A. Clean interior of piping of dirt and superfluous materials. Flush with water.

END OF SECTION 334200

SECTION 347115 – SITE BOLLARDS

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. Bollards.

1.3 REFERENCES

A. ASTM International

1. ASTM A53 - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless
2. ASTM A135 - Standard Specification for Electric-Resistance-Welded Steel Pipe

1.4 SUBMITTALS

A. Submittals in this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.

B. Manufacturer's installation instructions shall be provided along with product data.

C. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).

D. Product Data: For each type of product.

E. Submit an Environmental Product Declaration (EPD) from the manufacturer for steel pipe bollards within this specification section, if available. A statement of the contractor's good faith effort to obtain the EPD shall be provided if not available.

1. Manufacturer-provided EPDs must be Product Specific Type III (Third-Party Reviewed), in adherence with ISO 14025 *Environmental labels and declarations*, ISO 14044 *Environmental management – Life cycle assessment*, and ISO 21930 *Core rules for environmental product declarations of construction products and services.*

F. Samples: For each exposed product and for each color and texture specified.

G. Samples for Initial Selection: For units with factory-applied finishes.

H. Samples for Verification: For each type of exposed finish, not less than 6-inch-6-inch-long linear components and 4-inch-4-inch-square sheet components.

1.5 CLOSEOUT SUBMITTALS

A. Maintenance Data: For site furnishings to include in maintenance manuals.

PART 2 - PRODUCTS

2.1 BOLLARDS

A. Manufacturers:

1. Canterbury Designs.
2. Columbia Cascade Company.
3. Eagle Manufacturing Company.
4. Approved equivalent.

B. Bollard Construction:

1. Pipe OD: Not less than 8 inches.

a. Steel: Schedule 40 pipe.

2. Style: Dome top.
3. Overall Height: 4 feet, 4 inches.
4. Overall Width: 8 inches.
5. Overall Depth: 4 feet.
6. Accessories: Yellow pipe sleeve.
7. Installation Method: Cast in concrete.

C. Steel Finish: Galvanized**.**

1. Color: Black

2.2 MATERIALS

A. Plastic: Color impregnated, color and UV-light stabilized, and mold resistant.

1. Polyethylene: Fabricated from virgin plastic HDPE resin.

B. Anchors, Fasteners, Fittings, and Hardware: Manufacturer's standard, corrosion-resistant-coated or noncorrodible materials; commercial quality, tamperproof, vandal and theft resistant, concealed, recessed, and capped or plugged.

C. Nonshrink, Nonmetallic Grout: Premixed, factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C1107; recommended in writing by manufacturer, for exterior applications.

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

2.3 FABRICATION

A. Metal Components: Form to required shapes and sizes with true, consistent curves, lines, and angles. Separate metals from dissimilar materials to prevent electrolytic action.

B. Exposed Surfaces: Polished, sanded, or otherwise finished; all surfaces smooth, free of burrs, barbs, splinters, and sharpness; all edges and ends rolled, rounded, or capped.

C. Factory Assembly: Factory assemble components to greatest extent possible to minimize field assembly. Clearly mark units for assembly in the field.

2.4 GENERAL FINISH REQUIREMENTS

A. Appearance of Finished Work: Noticeable variations in same piece are unacceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

2.5 STEEL AND GALVANIZED-STEEL FINISHES

A. Powder-Coat Finish: Manufacturer's standard polyester, powder-coat finish complying with finish manufacturer's written instructions for surface preparation, including pretreatment, application, baking, and minimum dry film thickness.

B. PVC Finish: Manufacturer's standard, UV-light stabilized, mold-resistant, slip-resistant, matte-textured, dipped or sprayed-on, PVC-plastisol finish, with flame retardant added; complying with coating manufacturer's written instructions for pretreatment, application, and minimum dry film thickness.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and conditions, with Installer present, for compliance with requirements for correct and level finished grade, mounting surfaces, installation tolerances, and other conditions affecting performance of the Work.

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

3.2 INSTALLATION

A. Comply with manufacturer's written installation instructions unless more stringent requirements are indicated. Complete field assembly of site furnishings where required.

B. Unless otherwise indicated, install site furnishings after landscaping and paving have been completed.

C. Install site furnishings level, plumb, true, and positioned at locations indicated on Drawings.

D. Post Setting: Set cast-in support posts in concrete footing with smooth top, shaped to shed water. Protect portion of posts above footing from concrete splatter. Verify that posts are set plumb or at correct angle and are aligned and at correct height and spacing. Hold posts in position during placement and finishing operations until concrete is sufficiently cured.

E. Posts Set into Voids in Concrete: Form or core-drill holes for installing posts in concrete to depth recommended in writing by manufacturer of site furnishings and larger than OD of post. Clean holes of loose material, insert posts, and fill annular space between post and concrete with anchoring cement, mixed and placed to comply with anchoring material manufacturer's written instructions, with top smoothed and shaped to shed water.

END OF SECTION 347115

NEW YORK STATE | Office of General Services

Design and Construction

Division of Codes & Construction Permitting, 33rd Floor, Corning Tower
The Governor Nelson A. Rockefeller Empire State Plaza
Albany, New York 12242
Phone: (518) 474-1314

STATEMENT OF SPECIAL INSPECTIONS

Project No.: 47510

Instructions: BCNYS Section 1704.2.3 requires the project Design Professional to complete the Statement of Special Inspections *as a condition for issuance of the Construction Permit.* Complete each section of this form as applicable, and submit it to the Code Compliance Manager with the Summary of Special Inspections (BDC 406).

PROJECT INFORMATION:	**DESIGNER INFORMATION:**		**CONSTRUCTION INFORMATION**:	
Project Description: *(Project Title, Facility Name and Address)* PROVIDE STORAGE BUILDING DOT REGION 5 ERIE COUNTY 75 EVANS STREET HAMBURG, NY 14075-6103	Architect/Engineer/Consultant: ARCHITECTURAL RESOURCES		Engineer- In-Charge:	Region:
	Name of Person Completing Form: *(if different from above)* MITHILA POOJARI-ARNDT, AIA		Name of Person Completing Form: *(if different from above)*	
	Phone: 716-332-5072	Date: 02/04/2026	Phone:	Date:
Business Unit:	Comments:		Comments:	
Team Leader:				

Check if Required	INSPECTION AND TESTING Continuous and Periodic as defined by the BCNYS	Continuous	Periodic	REFERENCE STANDARD	BCNYS REFERENCE	SPEC SECTION	COMMENTS	REGIONAL INSPECTION ASSIGNMENTS
	A. Steel Construction				1705.2			
☒	1. Structural steel.	☒	☐	AISC 360 Chapter N.5	1705.2, 1705.2.1	051200		
☒	2. Cold-formed steel deck.		☒	SDI QA/QC 2011	1705.2, 1705.2.2	053100		
☐	3. Installation of open-web steel joist and joist girders.		☐	SJI specification (Section 2207.1)	1705.2, 1705.2.3, 1705.2.4			
	B. Concrete Construction				1705.3			
☒	1. Inspection of reinforcing steel, including prestressing tendons, and placement.		☒	ACI 318: Ch. 20, 25.2, 25.3, 26.6.1-26.6.3	1705.3, 1908.4	033000		

Check if Required	INSPECTION AND TESTING Continuous and Periodic as defined by the BCNYS	Continuous	Periodic	REFERENCE STANDARD	BCNYS REFERENCE	SPEC SECTION	COMMENTS	REGIONAL INSPECTION ASSIGNMENTS
	B. Concrete Construction				1705.3			
☐	2a. Reinforcing bar welding - Weldability of reinforcing bars other than ASTM A706.		☐	AWS D1.4; ACI 318: 26.6.4	1705.3, 1705.3.1			
☐	2b. Reinforcing bar welding - Single-pass fillet welds, maximum 5/16 inches.		☐	AWS D1.4; ACI 318: 26.6.4	1705.3, 1705.3.1			
☐	2c. Reinforcing bar welding - All other welds.	☐		AWS D1.4; ACI 318: 26.6.4	1705.3, 1705.3.1			
☒	3. Cast in concrete anchorage.		☒	ACI 318: 17.8.2	1705.3	033000		
☒	4a. Post installed concrete members - Adhesive anchors installed horizontally or upwardly inclined to resist sustained tension loads.	☒		ACI 318: 17.8.2.4	1705.3	033000		
☒	4b. Post installed concrete members - Mechanical anchors and adhesive anchors not defined in 4.a.		☒	ACI 318: 17.8.2		033000		
☒	5. Verify use of required design mix.		☒	ACI 318: Ch. 19, 26.4.3, 26.4.4	1705.3, 1904.1, 1904.2, 1908.2, 1908.3	033000		
☒	6. Sampling fresh concrete: slump, air content, temperature, strength test specimens.	☒		ASTM C 172, ASTM C31; ACI 318: 26.4, 26.12	1705.3, 1908.10	033000		
☒	7. Inspect concrete and shotcrete placement for proper application techniques.	☒		ACI 318: 26.5	1705.3, 1908.6, 1908.7, 1908.8	033000		
☒	8. Inspection for maintenance of specified curing temperature and techniques.		☒	ACI 318: 26.5.3-26.5.5	1705.3, 1908.9	033000		
☐	9. Inspection of prestressed concrete.	☐		ACI 318: 26.10	1705.3			

Check if Required	INSPECTION AND TESTING Continuous and Periodic as defined by the BCNYS	Continuous	Periodic	REFERENCE STANDARD	BCNYS REFERENCE	SPEC SECTION	COMMENTS	REGIONAL INSPECTION ASSIGNMENTS
☐	10. Erection of precast concrete members.		☐	ACI 318: Ch. 26.8	1705.3			
☐	11. Verification of in-situ concrete strength prior to stressing of tendons in post-tensioned concrete and prior to removal of shores and forms from beams and slabs.		☐	ACI 318: 26.11.2	1705.3			
☒	12. Inspect formwork for shape, location and dimensions of the concrete member being formed.		☒	ACI 318: 26.11.1.2(b)		033000		
☒	13. Material Tests – In absence of sufficient data or documentation for materials.		☒	ACI 318 Ch. 19 and 20		033000		
	C. Masonry Construction				1705.4			
☐	1. Masonry construction.	☐	☐	ACI 530/ ASCE 5/TMS 402 and ACI 530.1/ ASCE 6/TMS 602 Ch. 3	1705.4			
☐	2. Empirically designed masonry, glass unit masonry and masonry veneer in Risk Category IV.		☐	TMS 402/ ACI530/ ASCE 5 Level B Ch. 3	1705.4.1, 2109, 2110, or Ch. 14			
☐	3. Vertical masonry foundation elements.	☐	☐		1705.4, 1705.4.2			
	D. Wood Construction				1705.5			
☐	1. Wood construction- Fabrication of wood structural elements and assemblies.		☐		1705.5, 1704.2.5			
☐	2. High-load Diaphragms.		☐		1705.5, 1705.5.1, 2306.2,1704.2			

Check if Required	INSPECTION AND TESTING Continuous and Periodic as defined by the BCNYS	Continuous	Periodic	REFERENCE STANDARD	BCNYS REFERENCE	SPEC SECTION	COMMENTS	REGIONAL INSPECTION ASSIGNMENTS
	D. Wood Construction				1705.5			
☐	3. Metal-plate-connected wood trusses spanning 60 feet or greater (temp. and perm. installation).		☐		1705.5.2			
	E. Soils				1705.6			
☒	1. Subgrade inspection.		☒		1705.6	310000		
☒	2. Classification and testing of compacted fill materials.		☒		1705.6	310000		
☒	3. Evaluation of in-place density and lift thickness.	☒			1705.6	310000		
☐	**F. Driven Deep Foundations** Installation and load tests (if applicable).	☐			1705.7			
☐	**G. Cast-In-Place Deep Foundations** Installation, end bearing strata, and load tests (if applicable).	☐			1705.8			
☐	**H. Helical Pile Foundation** Installation and load tests (is applicable).	☐			1705.9			
☒	**I. Fabricated Items**		☒		1705.10, 1704.2.5	133419	PEMB Inspections	
☐	**J. Wind Resistance** Applicable in Exposure Category B with a basic wind speed of 120 mph and Exposure Categories C or D with basic wind speed of 110 mph or greater.				1705.11			
☐	1a. Structural wood - Field gluing operation of elements of main wind force-resisting system (MWRS).	☐			1705.11.1			

Check if Required	INSPECTION AND TESTING Continuous and Periodic as defined by the BCNYS	Continuous	Periodic	REFERENCE STANDARD	BCNYS REFERENCE	SPEC SECTION	COMMENTS	REGIONAL INSPECTION ASSIGNMENTS
☐	**J. Wind Resistance** Applicable in Exposure Category B with a basic wind speed of 120 mph and Exposure Categories C or D with basic wind speed of 110 mph or greater.				1705.11			
☐	1a. Field Gluing	☐			1705.11.1			
☐	1b. Structural wood - Nailing, bolting, anchoring, and fastening elements of the MWRS.		☐		1705.11.1			
☐	2a. Cold formed steel - Welding operations of elements of MWRS.		☐		1705.11.2			
☐	2b. Cold formed steel - Screw attachments, bolting, anchoring, and fastening of elements of MWRS.		☐		1705.11.2			
☐	3. Wind-resisting components – Roof covering, roof deck, and roof framing connections. Exterior wall covering and wall connections to roof and floor diaphragms and framing.		☐		1705.11, 1705.11.3			
☐	**K. Special Inspections for Seismic Resistance** Applicable to specific structures, systems, and components.				1705.12			
☐	1. Structural steel - Seismic force-resisting systems & elements.	☐		AISC 341 Ch. J	1705.12.1.1 or 1705.12.1.2			
☐	2a. Structural wood - Field gluing operation of elements of seismic force-resisting system (SFRS).	☐			1705.12.2			
☐	2b. Structural wood - Nailing, bolting, anchoring, and fastening of elements of SFRS.		☐		1705.12.2			

Check if Required	INSPECTION AND TESTING Continuous and Periodic as defined by the BCNYS	Continuous	Periodic	REFERENCE STANDARD	BCNYS REFERENCE	SPEC SECTION	COMMENTS	REGIONAL INSPECTION ASSIGNMENTS
	K. Special Inspections for Seismic Resistance Applicable to specific structures, systems, and components.				1705.12			
☐	3. Cold-formed steel framing – welding and fasteners.		☐		1705.12.3			
☐	4. Designated seismic systems – verify that label, anchorage, and mounting conforms to the certificate of compliance.		☐	ASCE 7 Section 13.2.2	1705.12.4			
☐	5. Architectural components.		☐		1705.12.5			
☐	6. Plumbing, Mechanical and electrical components.		☐		1705.12.6			
☐	7. Storage racks and access floors.		☐		1705.12.7,			
☐	8. Seismic isolation systems.		☐		1705.12.8			
☐	9. Cold-formed steel special bolted moment frames.		☐		1705.12.9			
☐	**L. Structural Testing for Seismic Resistance** Applicable to specific structures, systems, and components.				1705.13			
☐	1. Structural steel.	☐	☐	AISC 341 Ch. J	1705.13.1			
☐	2. Nonstructural components.		☐	ASCE 7 Section 13.2.1	1705.13.2			
☐	3. Designated seismic systems.		☐	ASCE 7 Section 13.2.2	1705.13.3			

Check if Required	INSPECTION AND TESTING Continuous and Periodic as defined by the BCNYS	Continuous	Periodic	REFERENCE STANDARD	BCNYS REFERENCE	SPEC SECTION	COMMENTS	REGIONAL INSPECTION ASSIGNMENTS
	L. Structural Testing for Seismic Resistance Applicable to specific structures, systems, and components.				1705.13			
☐	4. Seismic isolation systems.		☐	ASCE 7 Section 17.8	1705.13.4			
	M. Sprayed Fire-Resistant Materials [BF]				1705.14			
☐	1. Physical and visual tests.		☐		1705.14.1			
☐	2. Structural member surface conditions.		☐		1705.14.2			
☐	3. Application.		☐		1705.14.3			
☐	4. Thickness.		☐	ASTM E 605	1705.14.4			
☐	5. Density.		☐	ASTM E 605	1705.14.5			
☐	6. Bond strength.		☐	ASTM E 736	1705.14.6			
☐	**N. Mastic and Intumescent Fire-Resistant Coatings [BF]**		☐	AWCI 12-B	1705.15			
☐	**O. Exterior Insulation and Finish Systems (EIFS)**		☐	ASTM E2570	1705.16			
☐	**P. Fire-Resistant Penetrations and Joints [BF]** High rise building or buildings assigned to risk category III or IV		☐	ASTM E2174 ASTM E2393	1705.17			
☐	**Q. Testing for Smoking Control [F]**		☐		1705.18			

NEW YORK STATE
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Albany, New York 12242
Phone: (518) 486-9284 FAX: (518) 486-9285

CONTRACTOR'S MWBE UTILIZATION PLAN

☐ Revised Plan

Contract No.: _____

REMINDER: Utilize the New York State Contract System located at https://ny.newnycontracts.com/Default.asp?TN=ny&XID=8353 to report MWBE payments on a monthly basis. Making false representations or including information evidencing a lack of good faith as part of, or in conjunction with, the submission of a Utilization Plan is prohibited by law and may result in penalties including, but not limited to, termination of a contract for cause, loss of eligibility to submit future bids, and/or withholding of payments. Firms that do not perform commercially useful functions may not be counted toward MWBE utilization.

Contractor's Name, Address and Federal ID No.:	Contract Description/Location:	Date Proposal Approved:	Date Printed:	Bid Date:	MWBE GOALS	
					MBE%	WBE%
Federal ID No.:	Work/Job Order:	OGS Project Number:	Work Order Value:	Contract Amount:		

Certified MBE/WBE Name, Address and Phone No.	MBE	WBE	Tiered Sub	Description of Subcontracting/Supplies	Anticipated performance/purchase date(s)	Dollar Value of Subcontract/Supplies	FOR OGS USE ONLY	SEE BDC 328.1
Federal ID No.:	☐	☐	☐					☐
Federal ID No.:	☐	☐	☐					☐
Federal ID No.:	☐	☐	☐					☐
Federal ID No.:	☐	☐	☐					☐

Pursuant to Executive Law Article 15-A, my firm will engage in a good faith effort to achieve the MWBE goals on this contract.

Contractor's Signature:

Enter Name:

Title:

E-Mail Address: Date:

Contractor's Comments:

FOR OGS USE ONLY

☐ Accepted ☐ Accepted as Noted ☐ Notice of Deficiency Issued

MBE % _____ MBE $ _____ WBE % _____ WBE $ _____

OGS Authorized Signature:	Enter Name:	Date:

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Office of Business Diversity

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CONTRACTOR'S LIST OF SUBCONTRACTORS/SUPPLIERS

Contract No.

Contractor's Name, Address and Federal ID No.:	Project Description/Location:		Date Submitted:	Bid Date:	MWBE Goals		SDVOB Goal
					MBE	WBE	
Federal ID No.	☐ Construction Contracts Exceeding $100,000 ☐ Commodity or Service Contracts Exceeding $25,000		Submittal No.:	Contract Amount:			
Date Proposal Approved:	Date Printed:	OGS Project Number:	Work/Job Order:		Work Order Value:		

Subcontractor/Supplier Name, Address, Phone No., Federal ID No. (FEIN) and DOL No. *(Do not list information previously submitted.)*	Sub/Supplier *(Check One)*			MBE	WBE	SDVOB	General Description of Work	Subcontractor/ Supplier Dollar Value	**OGS Use Only**
	Sub	Tiered Sub	Supplier						
FEIN.: DOL No: - -CR	☐	☐	☐	☐	☐	☐			
FEIN.: DOL No: - -CR	☐	☐	☐	☐	☐	☐			
FEIN.: DOL No: - -CR	☐	☐	☐	☐	☐	☐			
FEIN.: DOL No: - -CR	☐	☐	☐	☐	☐	☐			

Pursuant to Executive Law Article 15-A and Article 3 of the Veterans' Services Law, my firm proposes to use the certified firms listed above.

Contractor's Signature

Title

Date

OGS Use Only

Proposed Goal Attainments:

MBE % _____ WBE % _____ SDVOB % _____

☐ Accepted ☐ Accepted as Noted ☐ Not Accepted

Reason: _____

OGS Authorized Signature _____ Date _____

Health & Safety Plan (HASP) for Environmental Services

NYSDOT Storage Building
75 Evans Street Site
Hamburg, New York

Prepared For:
Architectural Resources, D.P.C
505 Franklin Street
Buffalo, New York 14202

Prepared By:
TRC Engineers, Inc.
1090 Union Road, Suite 280
West Seneca, NY 14224

November 2025



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Appendix A	Emergency Response Plan
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1.0 Introduction

In accordance with OSHA requirements contained in 29 CFR 1910.120, this Health and Safety Plan (HASP) describes the specific health and safety practices and procedures to be employed by TRC Engineers, Inc. (TRC) personnel during various environmental activities to be performed at the 75 Evans Street Site (herein referred to as the "Site") located in the Town of Hamburg, Erie County, New York. This HASP presents procedures for TRC employees who will be involved with various environmental field activities; it does not cover the activities of other Contractors, Subcontractors, or other individuals on the Site. These firms (or agents), when utilized or on-site, will be required to develop and enforce their own HASPs as discussed in Section 2.0. As such, TRC accepts no responsibility for the health and safety of any Contractor, Subcontractor, or other personnel.

This HASP presents information on known Site health and safety hazards using available historical information, and identifies the equipment, materials, and procedures that will be used to eliminate or control these hazards. As necessary, environmental monitoring will be performed during field activities to provide real-time data for on-going assessment of potential hazards.

1.1 Project Understanding

It is TRC's understanding that the New York State Department of Transportation (NYSDOT) intends to construct a new storage building for NYSDOT Region 5 at the Site (see **Figures 1 and 2**). The proposed storage building, designed by our client Architectural Resources, D.P.C. (AR), is to be located at the approximate midpoint of the property along the western property line just north of an existing metal storage building. The proposed structure is to be a one-story pre-engineered metal building (PEMB) with a footprint of approximately 3,830 square feet. The property is relatively flat and covered by compacted crushed stone throughout the proposed building footprint.

We also understand that in November 2024, the Encorus Group (Encorus) performed an environmental assessment concurrently with Glynn Group Engineering & Architecture, PLLC (Glynn) who performed a geotechnical assessment of the Site. The results of both assessments are included in Encorus' *Contaminated Soil Screening Sampling and Geotechnical Report (dated December 17, 2024)*. Glynn's *Geotechnical Engineering Report (dated November 21, 2024)* was included as Appendix D to the Encorus Report. Both reports were provided by AR and reviewed by TRC.

1.2 Document Review & Environmental Conditions

According to Glynn's geotechnical report, three soil borings (identified as B-1, B-2, and B-3) were advanced at the Site (see **Figure 2**). Glynn described the unconsolidated subsurface material as being similar at all three boring locations, with soil/fill material encountered from grade to approximately 4.0 feet below ground surface (ft bgs), followed by loose to dense sand to approximately 12.0 ft bgs, compact to dense granular glacial till to approximately 18.5 ft bgs, where refusal at a shale bedrock unit was noted. Glynn described the soil/fill as a black, moist unit containing cinders and slag intermixed with silty sand and gravel. Reportedly, groundwater was initially identified at a depth of 13.4 ft bgs at boring B-1, 15.6 ft bgs at boring B-2, and 10.8 ft bgs at boring B-3. However, the Glynn geotechnical report ultimately estimated the depth to shallow groundwater to be 4.0 ft bgs based on their assessment of moisture content of recovered soil samples. Glynn's geotechnical report further stated that groundwater control during construction should be anticipated.

The Encorus Report indicated that two soil samples were collected from each of the geotechnical borings (B-1 through B-3) for laboratory analysis. However, the sample depth and/or subsurface unit(s) represented by these samples were not identified in the Report. TRC assumed that one soil sample was collected from the unsaturated zone (assumed to be the soil/fill unit, or from 0.0 to 4.0 ft bgs) and the other from the saturated zone (assumed to be the sand unit, or from 4.0 to 12.0 ft bgs).

Analytical results provided in the Encorus Report were summarized by TRC as presented in **Table 1** (attached). Examination of **Table 1** indicates there are only three exceedances of the Part 375 Unrestricted Use Soil Cleanup Objectives (UUSCOs), which include total arsenic (SAMPLE 1, boring B-1), total copper (SAMPLE 1, boring B-1), and total nickel (SAMPLE 3, boring B-2). TRC assumes that these samples are representative of the "SOIL/FILL" unit (unsaturated unit) identified in the boring logs. Because AR has indicated that the planned new building (and development) will be a commercial end-use (versus an unrestricted residential use) and the building excavation will be limited to the upper four feet (e.g., soil/fill unit only), the soil sample analytical results were also compared to the Part 375 Commercial Use Soil Cleanup Objectives (CUSCOs) in **Table 1**. There are no exceedances of the CUSCOs for any of the soil samples analyzed. However, due to the anthropogenic nature of the soil/fill (i.e., slag, cinders, and fill) as well as UUSCO exceedances, excess soil/fill material excavated during construction is considered a solid waste and field screening, stockpiling, segregating, and off-site disposal of generated soil/fill spoils will be required.

Slag was also identified in each boring by Glynn. Depending on the source of the slag, it has the potential to be technologically enhanced naturally occurring radiological material (TENORM). In general, TENORM emits low-level radiological activity and contains radionuclides that are present naturally in rocks, soils, water, and minerals and that have become concentrated and/or exposed to the accessible environment due to human activities such as manufacturing, water treatment, or mining operations. It is also possible that the slag material identified at the Site is a byproduct of former iron and steel manufacturing operations conducted at nearby facilities in Erie County (i.e., Former Bethlehem Steel, Republic Steel, Donner Hanna, etc.) which processed and co-processed NORM-containing ores and mined materials. The primary TENORM isotope associated with metal producing slag is Radium-226. Radium (chemical symbol Ra) is a naturally occurring radioactive metal with the most common isotopes being Ra-226, Ra-224, and Ra-228. Radium-226, Ra-228 and their respective progeny, emit alpha and beta particles as well as gamma radiation when undergoing radioactive decay.

1.3 Constituents of Primary Concern

Environmental soil sample analyses show that soil/ fill constituents detected at the Site include elevated concentrations of heavy metals and potential TENORM slag. TENORM Slag identified at the Site may be the common byproduct of local steel manufacturing operations. These constituents of primary concern (COPCs) in soil, and potentially groundwater, at the Site include:

- **Inorganic Compounds –** Heavy metals were identified in soil/fill at the Site. Most of these constituents are commonly found in urban/suburban soils at trace levels, especially in industrialized areas like this portion of Hamburg, NY. Inorganics present in Site soils at elevated concentrations relative to "background" or typical concentrations include arsenic, copper, and nickel. Several of these parameters are components of steelmaking operations and are present in elevated concentrations as a result of soil/fill used as backfill at the Site.
- **Radium-226** – Radium (chemical symbol Ra) is a naturally-occurring radioactive metal. Its most common isotopes are Radium-226, Radium 224, and Radium-228. Radium is a radionuclide

formed by the decay of uranium and thorium in the environment. Radium is considered a chain radionuclide. In nuclear science, the decay chain refers to the radioactive decay of different discrete radioactive decay products as a chained series of transformations. Most radioisotopes do not decay directly to a stable state, but rather undergo a series of decays until eventually a stable isotope is reached. Radium-226, Ra-228 and their respective progeny emit alpha and beta particles as well as gamma rays when undergoing radioactive decay. Radium occurs at low levels, 1 to 5 pCi/g in virtually all rock, soil, water, plants, and animals. The time required for a radioactive substance to lose 50 percent of its radioactivity by decay is known as the half-life. The half-life is 3.5 days for radium-224, 1,600 years for radium-226, and 6.7 years for radium- 228, after which each forms an isotope of radon.

In addition, groundwater in contact with the soil/fill materials described above may also exhibit elevated concentrations of the heavy metals and radium.

1.4 Overview of Environmental Activities

TRC personnel will be on-site to observe and perform remedial and/or redevelopment activities. Several field activities may be required during remedial construction, some of which are described below.

- Construction/excavation oversight.
- Community air monitoring.
- Soil/fill screening with handheld photoionization detector (PID) equipped with a 10.6 eV lamp.
- Soil/fill screening with handheld 2x2 meter (Ludlum Model 2221 Ratemeter/Scaler with a sodium iodide scintillator or equivalent) to measure the gamma radiation being emitted from subsurface soil/fill containing slag, in counts per minute (cpm).
- Site restoration oversight of topsoil, bio-retention, gravel, and/or asphalt cover materials.
- Subsurface delineation oversight of identified impacts including potential soil, groundwater, and/or soil vapor sampling.
- Waste characterization sampling.

2.0 Organizational Structure, Roles, & Responsibilities

This section of the HASP describes the lines of authority, responsibility, and communication as they pertain to health and safety functions at the Site. The purpose of this section is to identify the personnel who impact the development and implementation of the HASP and to describe their roles and responsibilities. This section also identifies other contractors and subcontractors that may be involved in work operations and establishes lines of communication among them for health and safety matters. The organizational structure described in this section is consistent with the requirements of 29 CFR 1910.120(b)(2). This section will be reviewed by the Project Manager and updated as necessary to reflect the current organizational structure at this Site.

All TRC personnel on the Site must comply with the minimum requirements of this HASP. The specific responsibilities and authority of management, safety and health, and other personnel on this Site are detailed in the following paragraphs.

2.1 ECR Safety Manager

The TRC ECR Safety Manager is ***Mr. Dave Sullivan.*** The ECR Safety Manager is responsible for developing and implementing the Health and Safety program and policies for TRC, and consulting with corporate management to ensure adequate resources are available to properly implement these programs and policies. The ECR Safety Manager coordinates TRC's Health and Safety training and medical monitoring programs and assists project management and field staff in developing site-specific health and safety plans.

2.2 Project Manager

The Project Manager for this Site is ***Mr. Bryan C. Hann, P.G*** *(or designated other).* The Project Manager has the responsibility and authority to direct all TRC work operations at the Site. The Project Manager coordinates safety and health functions with the Site Safety and Health Officer and bears ultimate responsibility for proper implementation of this HASP. He/she may delegate authority to expedite and facilitate any application of the program, including modifications to the overall project approach as necessary to circumvent unsafe work conditions. Specific duties of the Project Manager include:

- Preparing and coordinating the Site Work Plan.
- Providing TRC workers with work assignments and overseeing their performance.
- Coordinating health and safety efforts with the Site Safety and Health Officer (SSHO).
- Reviewing the emergency response coordination plan to assure its effectiveness.
- Serving as the primary liaison with Site contractors and the property owner.

2.3 Site Safety and Health Officer (SSHO)

The Site Safety and Health Officer (SSHO) for this Site is ***(to be determined)***. The qualified alternate SSHO is ***(to be determined).*** The SSHO reports to the Project Manager. The SSHO is on-site or readily accessible to the Site during all work operations and has the authority to halt Site work if unsafe conditions are detected. The specific responsibilities of the SSHO are:

- Managing the safety and health functions for TRC personnel on the Site.
- Serving as the point of contact for safety and health matters.
- Ensuring that TRC personnel working on the Site have received proper training (per 29 CFR Part 1910.120(e)), that they have obtained medical clearance to wear respiratory protection (per 29

CFR Part 1910.134), and that they are properly trained in the selection, use and maintenance of personal protective equipment, including qualitative respirator fit testing.

- Performing or overseeing Site monitoring as required by the HASP.
- Assisting in the preparation and review of the HASP.
- Maintaining site-specific safety and health records as described in this HASP.
- Coordinating with the Project Manager, Site Workers, and Contractor's and/or Subcontractor's SSHO as necessary for safety and health efforts.

2.4 Assistant Site Safety and Health Officer (Asst SSHO)

In the event the SSHO is not on site, the Assistant SSHO will assume the responsibilities of the SSHO. It is TRC's intent to have a TRC SSHO or Assistant SSHO available onsite during work activities. On the occasion neither person is physically onsite, they will be available by phone or pager.

2.5 Site Workers

Site workers are responsible for understanding and complying with this HASP or a more stringent HASP, if appropriate (i.e., Contractor and Subcontractor's HASP); required to participate in Tailgate Safety Meetings prior to commencement of site work; using proper PPE; reporting unsafe acts and conditions to the SSHO; and following the safety and health instructions of the Project Manager, SSHO, and Assistant SSHO. Each TRC employee working on the Site is required to acknowledge an understanding of the HASP by signing the acknowledgement page of the HASP.

2.6 Other Site Personnel

Other Site personnel who will have health and safety responsibilities may include specialty Contractors/Subcontractors and their employees (i.e., drillers, laboratories, site contractors, etc.), who will be responsible for developing, implementing, and enforcing a HASP equally stringent or more stringent than TRC's HASP. TRC assumes no responsibility for the health and safety of anyone outside its direct employment. Each Contractor and Subcontractor's HASP shall cover all non-TRC Site personnel. Each Contractor and Subcontractor shall assign a SSHO who will coordinate with TRC's SSHO as necessary to ensure effective lines of communication and consistency between contingency plans.

In addition to TRC and Contractor personnel, other individuals who may have responsibilities in the work zone include Subcontractors and Governmental Agencies performing Site inspection work (i.e., NYSDEC/NYSDOH). TRC shall be responsible for ensuring that Government Agents, and the Contractor for ensuring that their Subcontractors, have received current OSHA-required training (29 CFR 1910.120(e)), including initial, refresher and site-specific training, and each shall be respectively responsible for the safety and health of these individuals while they are on-site.

2.7 Revisions to HASP

If a situation arises where the HASP requires revision, the following options are available:

- Except in the case of emergency situations, no deviations from the HASP may be implemented without the prior notification and approval of the TRC SSHO.
- If HASP revisions are minor (i.e. not involving significant changes to the scope of work, associated hazards or PPE requirements), the TRC SSHO can make hand-written revisions to the HASP in the field. HASP Revisions must then be communicated to affected personnel and the Project Manager/Supervisor.

- If HASP revisions are substantial (i.e. involving significant changes to the scope of work, associated hazards or PPE requirements), the TRC SSHO must consult with the Project Manager/Supervisor before making revisions. The TRC SSHO can make hand-written revisions to the HASP in the field. HASP Revisions must then be communicated to affected personnel and the Project Manager/Supervisor. It is up to the discretion of the Project Manager/Supervisor whether a revised HASP will be reissued to replace the original HASP on the work site.

3.0 Hazard Evaluation

Due to the presence of certain contaminants at the Site, the possibility exists that workers will be exposed to hazardous and/or TENORM substances during field activities. The principal points of exposure would be through direct contact with and incidental ingestion of soil, and through the inhalation of contaminated particles or vapors. Other points of exposure may include direct contact with groundwater. In addition, the use of drilling and/or medium to large-sized construction equipment (e.g., excavator) will also present conditions for potential physical injury to workers. Further, since work will be performed outdoors, the potential exists for heat/cold stress to impact workers, especially those wearing protective equipment and clothing. Adherence to the medical evaluations, worker training relative to chemical hazards, safe work practices, proper personal protection, environmental monitoring, establishment work zones and Site control, appropriate decontamination procedures and contingency planning outlined herein will reduce the potential for chemical exposures and physical injuries.

3.1 Chemical Hazards

As discussed in Section 1.0, historic waste handling and production activities have resulted in elevated concentrations of petroleum products, inorganics, and cyanide in Site soils, and to a lesser extent in Site groundwater. Previous field investigations and remedial efforts have provided significant information concerning the types of contaminants that may potentially be encountered during environmental activities. **Table 1** lists exposure limits for airborne concentrations of the COPCs identified in Section 1.3 of this HASP. Brief descriptions of the toxicology of the prevalent COPCs and related health and safety guidance and criteria are provided below.

- **Arsenic (CAS #7440-38-2)** is a naturally occurring element and is usually found combined with one or more elements, such as oxygen or sulfur. Inhalation is a more important exposure route than ingestion. First phase exposure symptoms include nausea, vomiting, diarrhea, and pain in the stomach. Prolonged contact is corrosive to the skin and mucus membranes. Arsenic is considered a Group A human carcinogen by the USEPA. Exposure via inhalation is associated with an increased risk of lung cancer. Exposure via the oral route is associated with an increased risk of skin cancer.
- **Copper (CAS #7440-50-8)** is a naturally occurring metal that is also released into the environment through human activities such as mining, industrial processes, and the use of agricultural fungicides. Copper has a strong tendency to bind to inorganic and organic ligands in water, soil, and sediments. A small amount of dissolved copper can travel through water, but the majority moves attached to suspended solids in runoff. Leaching to groundwater is generally limited due to strong soil binding, but it can occur, particularly in acidic soils or areas with high copper inputs. Humans are primarily exposed to copper through diet (food and water), but inhalation and dermal exposure can also occur, especially in occupational settings. High levels of exposure can cause adverse effects. Acute poisoning (e.g., ingesting large amounts of copper salts) can result in abdominal pain, nausea, vomiting, diarrhea, and in severe cases, liver and kidney damage, or even death. Chronic exposure to high levels (such as from corroded copper pipes in drinking water or certain industrial exposures) is associated with liver damage and may be a factor in some neurodegenerative diseases like Alzheimer's in susceptible individuals.
- **Nickel (CAS #7440-02-0)** is a naturally occurring element that is also released into the environment through anthropogenic activities. Its environmental fate and transport are heavily influenced by its chemical form and local conditions, which in turn determine its bioavailability and potential risks to human health. Nickel's fate in the environment is a function of its physical and chemical properties, as the element itself cannot be degraded. Nickel's mobility is highly dependent on pH, with lower pH (acidic conditions) increasing its solubility and bioavailability to plants and aquatic organisms. The free nickel ion (Ni^{+2}) is the most bioavailable and toxic form. Nickel enters aquatic and terrestrial environments through effluents, leachates from landfills and mining waste, and atmospheric

deposition. Certain nickel compounds (sulfides, oxides, and soluble salts) are classified as known human carcinogens (Group 1 by IARC) via the inhalation route, linked to increased risks of lung and nasal cavity cancers. Metallic nickel is considered a possible carcinogen (Group 2B). The risk is particularly high for workers in the nickel refining industry if proper hygiene practices are not followed. High or prolonged exposure to nickel can lead to a range of non-cancer health issues, with the severity depending on the compound's solubility, exposure route, and duration.

With respect to the anticipated environmental activities discussed in Section 1.4, possible routes of exposure to the above-mentioned contaminants are presented in **Table 2**. The use of proper respiratory equipment, as outlined in Section 7.0 of this HASP, will minimize the potential for exposure to airborne contamination. Exposure to contaminants through dermal and other routes will also be minimized using safe work practices (Section 6.0), protective clothing (Section 7.0), and proper decontamination procedures (Section 12.0).

3.2 Physical Hazards

Environmental activities at the Site may present the following physical hazards:

- The potential for physical injury during heavy construction equipment use, such as backhoes, excavators, bulldozers, cranes, vacuum trucks, and drilling equipment.
- The potential for heat/cold stress to employees during the summer/winter months (see Section 10.0).
- The potential for slip and fall injuries due to rough, uneven terrain, and/or open excavations, pits, or manholes.

These hazards represent only some of the means of injury that may be present during various environmental activities at the Site. Since it is impossible to list all potential sources of injury, it shall be the responsibility of each individual to exercise proper care and caution during all phases of the work.

3.3 Radiological Hazards

As discussed in Section 1.0, historic soil/fill backfilling and local production activities (i.e., iron and steel) may have resulted in TENORM slag material being present at the Site. The TENORM slag material may have resulted from the processing and co-processing of the NORM-containing ores and mined materials incorporated into the iron and steel manufacturing processes. Previous field investigations and remedial efforts of potential local contributors of TENORM slag have provided significant information concerning the types of radiological contaminants that may potentially be encountered during environmental activities at the Site; the primary isotope being Radium-226. Radium (chemical symbol Ra) is a naturally occurring radioactive metal. Its most common isotopes are Radium-224, Radium-226, and Radium-228. Radium occurs at low levels in virtually all rock, soil, water, plants, and animals. Isotopes Radium-226, Ra-228, and their respective progeny emit alpha and beta particles and almost all particle emissions are accompanied by gamma rays when undergoing radioactive decay.

Exposure limits for airborne alpha, beta/gamma radiation at the Site will be measured in accordance with NYSDEC Department of Materials Management (DMM) policy 5 (or DMM-5); *Management of Soils Contaminated with TENORM* using a Ludlum Model 2929 scaler (or equivalent) in counts per minute (cpm). Initially, a background count determination will be determined via ten (10), 1-minute static gamma readings collected using the Ludlum count ratemeter with both a collimated and an uncollimated detector. The Mean and Upper Tolerance

Level (UTL) are then calculated for the background location. Elevated count rates observed during intrusive activities exceeding the background UTL (collimated and uncollimated) would most likely indicate an anthropogenic source of radioactivity (i.e., TENORM). If count rates exceed 1.5 times background, a minimum of three representative composite samples of the TENORM material will be collected. A fixed, one-minute meter reading will be performed and recorded from each sample location. A correlation between the meter readings and soil concentrations will be developed to guide future project efforts.

Management requirements for the different types of TENORM from DMM-5 include:

- **TENORM (background comparable)** (below 5 pCi/g or Ra-226) – the Department may either grant a variance to allow the excavated TENORM (Background-comparable) to be returned to the excavation or Area of Contamination (AOC), or the assigned Environmental Radiation Specialist (ERS) determines, and approves, that the proposed use and handling is acceptable.
- **TENORM Fill** (between 5 pCi/g and 15 pCi/g of radium-226) – the Department may grant a variance to allow excavated TENORM fill to be returned to the excavation/AOC if the following conditions are met:
  1) The site where the TENORM fill is found contains undisturbed TENORM fill;
  2) All excavated TENORM fill is handled in conformance with the submitted and approved TENORM Management plan;
  3) An appropriate and approved institutional control(s) is put in place (e.g., deed restriction, environmental easement) for each AOC; and
  4) The TENORM fill does not exceed 15 pCi/g of radium-226.
- **TENORM Waste** (above 15 pCi/g of radium-226) – TENORM waste is considered a regulated waste per 6NYCRR Part 380 and must be disposed of in accordance with appropriate regulatory requirements at an authorized disposal facility.

Occupational Values provided for Radium-226 on Table 1 of 10 CFR 20, *Standard for Protection Against Radiation, Appendix B*. The Radium-226 Derived Air Concentration (DAC) found in this reference is 3E-10 uCi/ml. The DAC value is a derived limit intended to control chronic occupational exposures. The DAC value relates to one of two modes of exposure: either external submersion or the internal committed dose equivalents resulting from inhalation of radioactive materials.

The dose rates and total dose from exposure to radiation and radioactive materials has been determined to be significantly less than 1 milli-Sievert (100 mrem) at the Site. Because of this low total dose, no individual personnel monitoring (either external or internal) is required. Personnel monitoring is required under NYCRR Code 16 specifications when radiation doses are expected to exceed 500 mrem. Exposure to Radium-226 can occur via inhalation, oral, or dermal routes.

A brief description of the toxicology of Radium-226 and related health and safety guidance and criteria are provided below.

- **Radium-226 (CAS #7440-14-4)** is a naturally occurring radioactive isotope with a 1,600-year half-life that moves through the environment via water, air, and soil, primarily by adsorption to solid materials or dissolution in acidic water. Ra-226 decays by alpha particle radiation to an inert gas, Radon-222, which also decays by alpha particle radiation. Due to the short half-life of Radon-222, 3.8 days, there is a high probability it will decay in the body when breathed in, emitting alpha particle

radiation in the body. Human exposure can lead to severe health effects, notably bone and lung cancers, due to its ability to accumulate in bone tissue. Ra-226 exists as a divalent ion (Ra^{+2}) in water. Its mobility is largely controlled by adsorption to sediments and soil, and it is most mobile in acidic (low pH) environments where it is more soluble. Contaminated water sources pose a significant pathway for human exposure, especially if used for drinking or crop irrigation. Radium readily adsorbs to earth materials, which typically limits its transport in soil. However, it can accumulate in agricultural soils, especially with irrigation using contaminated groundwater. It does not readily volatilize from soil or water due to its ionic nature. The EPA regulates soil concentrations in uranium mill tailings to limit exposure. Ra-226 can be transported in the atmosphere in association with particulate matter, generally via wet or dry deposition. One of its key decay products is Ra-222, a radioactive gas which can be inhaled and is a cause of lung cancer. Ra-226 is associated with a significantly increased risk of various health issues including: cancer, particularly bone cancer and lung cancer (from radon progeny inhalation); anemia; cataracts; and, fractured teeth and general bone damage. The USEPA has established a maximum contaminant level (MCL) for combined Ra-226 and Ra-228 in drinking water of 5 picocuries per liter (pCi/L) to protect public health.

4.0 Training

4.1 Site Workers

All personnel performing environmental activities at the Site (such as, but not limited to, equipment operators, general laborers, and drillers) and who may be exposed to hazardous substances, health hazards, or safety hazards and their supervisors/managers responsible for the Site shall receive training in accordance with 29 CFR 1910.120(e) before they are permitted to engage in operations in the exclusion zone or contaminant reduction zone. This training includes an initial 40-hour Hazardous Waste Site Worker Protection Course (HAZWOPER), an 8-hour Annual Refresher Course subsequent to the initial 40-hour training, and 3 days of actual field experience under the direct supervision of a trained, experienced supervisor. Additional site-specific training shall also be provided by the SSHO prior to the start of field activities. A description of topics to be covered by this training is provided below.

4.1.1 Initial and Refresher Training

Initial and refresher training is conducted by a qualified instructor as specified under OSHA 29 CFR 1910.120(e)(5) and is specifically designed to meet the requirements of OSHA 29 CFR 1910.120(e)(3) and 1910.120(e)(8). The training covers, as a minimum, the following topics:

- OSHA HAZWOPER regulations.
- Site safety and hazard recognition, including chemical and physical hazards.
- Medical monitoring requirements.
- Air monitoring, permissible exposure limits, and respiratory protection level classifications.
- Appropriate use of PPE, including chemical compatibility and respiratory equipment selection and use.
- Work practices to minimize risk.
- Work zones and Site control.
- Safe use of engineering controls and equipment.
- Decontamination procedures.
- Emergency response and escape.
- Confined space entry procedures.
- Heat and cold stress monitoring.
- Elements of a HASP.
- Spill containment.

Initial training also incorporates workshops for PPE and respiratory equipment use (Levels A, B, and C), and respirator fit testing. Records and certification received from the course instructor documenting each employee's successful completion of the training identified above are maintained on file at TRC's West Seneca, New York office. Contractors and Subcontractors are required to provide similar documentation of training for all their personnel who will be involved in on-site work activities.

Any employee who has not been certified as having received health and safety training in conformance with 29 CFR 1910.120(e) is prohibited from working in the exclusion and

contamination reduction zones, or to engage in any on-site work activities that may involve exposure to hazardous substances or wastes.

4.1.2 Site Training

Site workers are given a copy of this HASP and provided with a site-specific briefing prior to the commencement of work to ensure that employees are familiar with the HASP and the information and requirements it contains. The Site briefing shall be provided by the SSHO prior to initiating field activities and shall include:

- Names of personnel and alternates responsible for Site safety and health.
- Safety, health, and other hazards present on the Site.
- The site layout includes work zones and places of refuge.
- The emergency communications system and emergency evacuation procedures.
- Use of PPE.
- Work practices by which the employee can minimize risks from hazards.
- Safe use of engineering controls and equipment on the site.
- Medical surveillance, including recognition of symptoms and signs of over-exposure as described in Chapter 5 of this HASP.
- The spill containment program as detailed in Chapter 9 of this HASP.
- Site control as detailed in Section 11.0 of this HASP.
- Decontamination procedures as detailed in Chapter 12 of this HASP.
- Confined space entry procedures, if required, as detailed in Chapter 13 of this HASP.
- The Emergency Response Plan as detailed in Chapter 15 of this HASP.

Supplemental health and safety briefings will also be conducted by the SSHO on an as-needed basis during the course of the work. Supplemental briefings are provided as necessary to notify employees of any changes to this HASP as a result of information gathered during additional Site characterization and analysis. Conditions for which the SSHO may schedule additional briefings include but are not limited to a change in Site conditions (e.g., based on monitoring results); changes in the work schedule/plan; newly discovered hazards; and safety incidents occurring during Site work.

4.2 Supervisor Training

On-site safety and health personnel who are directly responsible for or who supervise the safety and health of workers engaged in hazardous waste operations (i.e., SSHO) shall receive, in addition to the appropriate level of worker training described in Section 4.1, above, 8 additional hours of specialized supervisory training, in compliance with 29 CFR 1910.120(e)(4).

4.3 Emergency Response Training

Emergency response training is addressed in the Emergency Response Plan, included as **Appendix A**.

4.4 Site Visitors

Each Contractor and Subcontractor's SSHO will provide a site-specific briefing to all Site visitors and other non-TRC personnel who enter the Site beyond the Site entry point. The site-specific briefing will provide information about Site hazards, the Site layout including work zones and places of refuge, the emergency communications system and emergency evacuation procedures, and other pertinent safety and health requirements as appropriate. Site visitors will not be permitted to enter the exclusion zone or contaminant reduction zones unless they have received the level of training required for Site workers as described in Section 4.1.

5.0 Medical Surveillance

Medical surveillance, or monitoring, examinations are provided to TRC employees as stipulated under 29 CFR Part 1910.120(f). These exams include initial employment, at least once every 12 to 24 months (i.e., annual), upon notification (following possible overexposure, exposure, or injury), and employment termination physicals for all TRC employees involved in hazardous waste site field operations. Post-exposure examinations are also provided for employees who may have been injured, received a health impairment, or developed signs or symptoms of over-exposure to hazardous substances or were accidentally exposed to substances at concentrations above the permissible exposure limits without necessary personal protective equipment. Such exams are performed as soon as possible following development of symptoms or the known exposure event.

Medical evaluations are conducted according to the TRC Medical Monitoring Program and include an evaluation of the workers' ability to use respiratory protective equipment. The examinations include:

- Occupational/medical history review.
- Physical exam, including vital sign measurement.
- Spirometry testing.
- Eyesight testing.
- Audio testing (minimum baseline and exit, annual for employees routinely exposed to greater than 85db).
- EKG (for employees >40 years old or as medical conditions dictate).
- Chest X-ray (baseline and exit, and every 5 years).
- Blood biochemistry (including blood count, white cell differential count, serum multi-plastic screening).
- Medical certification of physical requirements (i.e., sight, musculoskeletal, cardiovascular) for safe job performance and to wear respiratory protection equipment.

The purpose of the medical evaluation is to determine an employee's fitness for duty on hazardous waste sites; and to establish baseline medical data. In conformance with OSHA regulations, TRC will maintain and preserve medical records for a period of 30 years following termination of employment. Employees are provided with a copy of the physician's post-exam report and have access to their medical records and analyses.

6.0 Safe Work Practices

6.1 General Safety Rules

All TRC employees shall conform to the following safe work practices during all on-site work activities conducted within the exclusion and contamination reduction zones:

- No one shall knowingly be permitted or required to work while the employee's ability or alertness is so impaired by fatigue, illness or other causes that it might unnecessarily expose the employee or others to injury.
- Eating, drinking, chewing gum or tobacco, smoking, or any practice that increases the probability of hand-to-mouth contact is strictly prohibited.
- Horseplay, fighting, gambling or the possession of firearms are not permitted.
- Work shall be well planned and supervised to prevent injuries. Supervisors shall ensure that employees observe and obey safety rules and regulations.
- An employee reporting for work who, in the opinion of his supervisor, is unable to perform his assigned duties in a safe and reasonable manner shall not be allowed on the job.
- The hands and face must be thoroughly washed upon leaving the work area and prior to engaging in any activity indicated above.
- Wear the required PPE in the workplace when appropriate and/or when specified in this HASP. Loose clothing and jewelry should not be worn when operating machinery.
- Respiratory protective equipment and clothing must be worn by all personnel entering the Site as required by the HASP or as modified by the Site safety officer. Excessive facial hair (i.e., beards, long mustaches, or sideburns) that interferes with the satisfactory respirator-to-face seal is prohibited.
- Contact with surfaces/materials either suspected or known to be contaminated will be avoided to minimize the potential for transfer to personnel, cross contamination and need for decontamination.
- Medicine and alcohol can synergize the effects of exposure to toxic chemicals. Due to possible contraindications, use of prescribed drugs should be reviewed with the TRC occupational physician. Alcohol and drugs are strictly prohibited on any TRC premises, customer property, and/or in Company vehicles. Employees shall not report to work under the influence of drugs or alcohol. Employees are prohibited from possessing, using, manufacturing, distributing, dispensing, selling or purchasing illegal drugs or other controlled substances (as defined under federal and state law).
- All personnel shall be familiar with the standard operating safety procedures and additional instructions contained in this HASP. No employee shall be assigned a task without first having been instructed on proper methods, including safety training, of carrying out the task. Any employee who feels they have not received proper instruction shall notify their supervisor prior to carrying out the task.
- Do not operate any machinery if you are not authorized or qualified to do so. If unsure how to operate a machine or perform any assigned task, ask the Project Manager/Supervisor before proceeding.
- Do not operate motorized equipment until proper training and certification has been provided (e.g. forklifts, etc.).
- On-site personnel shall use the “buddy” system. No one may work alone (i.e., out of earshot or visual contact with other workers) in the exclusion zone.

- Personnel and equipment in the contaminated area shall be minimized, consistent with effective Site operations.
- All employees have the obligation to immediately report and if possible, correct unsafe work conditions. Injuries and accidents shall be reported immediately to the immediate supervisor, who will then report it to the SSHO.
- Use of contact lenses on-site will not be permitted. Spectacle kits for insertion into full-face respirators will be provided for TRC employees, as requested, and required.

6.2 Contractor Safety Rules

The recommended specific safety practices for working around the Contractor's and/or Subcontractor's equipment (e.g., backhoes, bulldozers, excavators, drill rigs etc.) are as follows:

- Although the Contractor and Subcontractors are responsible for their equipment and safe operation of the Site, TRC personnel are also responsible for their own safety.
- Subsurface work will not be initiated without first clearing underground utility services.
- Heavy equipment should not be operated within 20 feet of overhead wires. This distance may be increased if windy conditions are anticipated or if lines carry high voltage. The Site should also be sufficiently clear to ensure the project staff can move around the heavy machinery safely.
- Care should be taken to avoid overhead wires when moving heavy equipment from location to location.
- Hard hats, safety boots and safety glasses should be worn at all times in the vicinity of heavy equipment. Hearing protection is also recommended.
- The work Site should be kept neat. This will prevent personnel from tripping and will allow for fast emergency exit from the Site.
- Proper lighting must be provided when working at night.
- Construction activities should be discontinued during an electrical storm or severe weather conditions.
- The presence of combustible gases should be checked before igniting any open flame.
- Personnel shall stand upwind of any construction operation when not immediately involved in sampling/logging/observing activities.
- Personnel will not approach the edge of an unsecured trench/excavation closer than two feet.

6.3 Incident Reporting

In case of an accident, TRC personnel are to immediately report the incident to the Project Manager/Supervisor and/or SSHO, and follow the TRC incident reporting procedures (CP019: *Incident Response and Lessons Learned Program*) detailed in the TRC Health and Safety Management System (HSMS) and provided in **Appendix B**.

TRC's incident reporting forms are also available in **Appendix B** and include:

- TRC Incident Notification Report
- TRC Motor Vehicle Incident Report
- TRC Safe Catch Report

All incidents and near misses are investigated in accordance with TRC's HSMS. The TRC Incident Notification Report and is to be completed and submitted to the TRC ECR Safety Manager and National Safety Director within 24 hours following any incident.

Contractor personnel are to report incidents to their SSHO who is then required to report the incident to the TRC SSO, TRC Alternate SSO or TRC Project Manager immediately. Some important information to include when reporting an incident are:

- A description of the event (including date and time).
- Details regarding personal injury and property damage, if any.
- Whether emergency services were notified (i.e., medical facilities, fire department, police department) and the basis for that decision. Including time and names of persons/agencies notified, and their response.
- Clarify the need for and type of TRC support.
- Immediate corrective action(s) taken.

7.0 Personal Protective Equipment

7.1 Equipment Selection

PPE will be donned when work activities may result in exposure to physical or chemical hazards beyond acceptable limits, and when such exposure can be mitigated through appropriate PPE. The selection of PPE will be based on an evaluation of the performance characteristics of the PPE relative to the requirements and limitations of the Site, the task-specific conditions and duration, and the hazards and potential hazards identified at the Site.

Equipment designed to protect the body against contact with known or suspect chemical hazards are grouped into four categories according to the degree of protection afforded. These categories, designated A through D, are consistent with United States Environmental Protection Agency (USEPA) Level of Protection designation, and include:

- **Level A:** Should be selected when the highest level of respiratory, skin and eye protection is needed.
- **Level B:** Should be selected when the highest level of respiratory protection is needed, but a lesser level of skin protection is required. Level B protection is the minimum level recommended on initial Site entries until the hazards have been further defined by on-site studies. Level B (or Level A) is also necessary for oxygen-deficient atmospheres.
- **Level C:** Should be selected when the types of airborne substances are known, the concentrations have been measured and the criteria for using air-purifying respirators are met. In atmospheres where no airborne contaminants are present, Level C provides dermal protection only.
- **Level D:** Should not be worn on any Site with elevated respiratory or skin hazards. This is generally a work uniform providing minimal protection.

OSHA requires the use of certain PPE under conditions where an immediate danger to life and health (IDLH) may be present. Specifically, OSHA 29 CFR 1910.120(g)(3)(iii) requires use of a positive pressure self-contained breathing apparatus, or positive pressure air-line respirator equipped with an escape air supply when chemical exposure levels present a substantial possibility of immediate serious injury, illness, or death, or impair the ability to escape. Similarly, OSHA 29 CFR 1910.120(g)(3)(iv) requires donning totally encapsulating chemical protective suits (with a protection level equivalent to Level A protection) in conditions where skin absorption of a hazardous substance may result in a substantial possibility of immediate serious illness, injury, or death, or impair the ability to escape.

In situations where the types of chemicals, concentrations, and possibilities of contact are unknown, the appropriate level of protection must be selected based on professional experience and judgment until the hazards can be further characterized. The individual components of clothing and equipment must be assembled into a full protective ensemble to protect the worker from site-specific hazards, while at the same time minimizing hazards and drawbacks of the personal protective gear itself. Ensemble components are detailed below for levels A/B, C, and D protection.

7.2 Protection Ensembles

7.2.1 Level A/B Protection Ensemble

Level A/B ensembles include similar respiratory protection; however, Level A provides a higher degree of dermal protection than Level B. Use of Level A over Level B is determined by comparing the concentrations of identified substances in the air with skin toxicity data and assessing the effect of the substance (by its measured air concentrations or splash potential) on the small area of the head and neck unprotected by Level B clothing.

The recommended PPE for level A/B is:

- Pressure-demand, full-face piece self-contained breathing apparatus (MSHA/NIOSH approved) or pressure-demand supplied-air respirator with escape self-contained breathing apparatus (SCBA).
- Chemical-resistant clothing. For Level A, clothing consists of totally encapsulating chemical resistant suit. Level B incorporates hooded one-or two-piece chemical splash suit.
- Inner and outer chemical resistant gloves.
- Chemical-resistant safety boots/shoes.
- Hardhat.

7.2.2 Level C Protection Ensemble

Level C protection is distinguished from Level B by the equipment used to protect the respiratory system, assuming the same type of chemical-resistant clothing is used. The main selection criterion for Level C is that conditions permit wearing an air-purifying device. The device (when required) must be an air-purifying respirator (MSHA/NIOSH approved) equipped with filter cartridges. Cartridges must be able to remove the substances encountered. Respiratory protection will be used only with proper fitting, training, and the approval of a qualified individual. In addition, an air-purifying respirator can be used only if: oxygen content of the atmosphere is at least 19.5% in volume; substances are identified, and concentrations measured; substances have adequate warning properties; the individual passes a qualitative fit-test for the mask; and an appropriate cartridge/canister is used, and its service limit concentration is not exceeded.

Recommended PPE for Level C conditions includes:

- Full-face piece, air-purifying respirator equipped with MSHA and NIOSH approved organic vapor/acid gas/dust/mist combination cartridges or as designated by the SSHO.
- Chemical-resistant clothing (hooded, one or two-piece chemical splash suit or disposable chemical-resistant one-piece suit).
- Inner and outer chemical-resistant gloves.
- Chemical-resistant safety boots/shoes.
- Hardhat.

An air-monitoring program is part of all response operations when atmospheric contamination is known or suspected. It is particularly important that the air be monitored thoroughly when personnel are wearing air-purifying respirators. Continual surveillance using direct-reading instruments is needed to detect any changes in air quality necessitating a higher level of respiratory protection.

7.2.3 Level D Protection Ensemble

As indicated above, Level D protection is primarily a work uniform. It can be worn in areas where only boots can be contaminated, where there are no inhalable toxic substances and where the atmosphere contains at least 19.5% oxygen.

Recommended PPE for Level D includes:

- Coveralls
- Safety boots/shoes
- Safety glasses or chemical splash goggles
- Hardhat
- Optional gloves; escape mask; face shield

7.2.4 Recommended Level of Protection for Site Tasks

Based on current information regarding both the contaminants suspected to be present at the Site and the various tasks that are included in the remedial activities, the minimum required levels of protection for these tasks shall be as identified in **Table 3**.

8.0 Exposure Monitoring

Exposure monitoring is required to verify the presence or absence of a hazardous gas/vapor atmosphere whenever a situation or condition arises that could reasonably result in a hazardous atmosphere. Based on the results of historic sample analysis and the nature of potential work activities at the Site, the possibility exists that organic vapors and/or particulate matter less than 10 microns in size (PM-10), or respirable particulates (either organic or radioactive), may be released to the air creating an exposure pathway. Depending on the activity type or location, real-time air monitoring for organic vapor (e.g., permissible exposure limit, or PEL), respirable particulate levels, flammability, and/or oxygen deficiency/abundance within the **On-Site Work Zone** and at the downwind perimeter of the Site, or **Downwind Community Air** location, may be required. Unlike on-site work zone air monitoring, community air monitoring is not intended for use in establishing action levels for worker respiratory protection, rather, it is intended to provide a measure of protection for the downwind community (i.e., off-site receptors including residences and businesses and on-site workers not directly involved with subject work activities) from potential airborne contaminant releases directly related to intrusive Site activities.

Based on OSHA's definition of a hazardous atmosphere, there are four different hazards that require monitoring. The table below describes the type of hazard, what air monitoring equipment to use and what levels constitute a hazard. The information provided in the table does not take into consideration all the possible variations of hazardous atmosphere, however it will provide guidance when determining the presence of a hazardous atmosphere. Any questions or concerns should be directed to the SSO before work begins.

Hazard	Appropriate Air Monitoring Equipment	Hazardous Levels	Comments
Flammability	Combustible gas indicators (CGI) are direct-reading instruments; measures % Lower Explosive Limit (LEL) and oxygen.	>25% of the LEL during cold work >10% of the LEL during hot work	*Since many flammable vapors are heavier than air, be sure to take readings at ground level. Work be suspended if CGI readings exceed 10% of LEL.*
Oxygen deficiency or abundance	Same as above or an Oxygen Meter	<19.5% and >23.5%	*Concentrations >23.5% may present an increased flammability hazard.*
Exceeding the permissible exposure limit (PEL)	Photoionization detector (PID) can detect organic and inorganic vapors/gases	Varies depending on chemical. See **Attachment B** for hazardous levels of common chemicals	*It is impossible to differentiate the different chemicals using a PID meter. However, the PID will indicate whether chemicals are present and at what levels. Measurements taken within worker's breathing zone will be used to determine respiratory protection requirements.*
Respirable particulates	TSI 8530 DustTrak II PM-10 aerosol monitor (or similar)	< 50 mg/m^3 - continue field operations. 50-150 mg/m^3 - don dust/particulate mask or equivalent. >150 mg/m^3 - don dust/particulate mask or equivalent. Initiate engineering controls.	*Particles are defined by their diameter for regulatory purposes. Those with a diameter of 10 microns or less (PM10) are inhalable into the lungs and can induce adverse health effects. Fine particulate matter is defined as particles that are 2.5 microns or less in diameter (PM2. 5).* *Engineering controls to reduce respirable dust concentration (i.e., wetting of excavated soils or tools at discretion of SSHO).*

Periodic monitoring for organic vapors will be required during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing wells. The SSHO (and/or NYSDEC) may require continuous monitoring during non-intrusive activities performed proximate to sensitive off-site community receptors where potential exposure is reasonably expected. *Continuous monitoring* will be required during all ground-intrusive activities and during the demolition of contaminated or potentially contaminated structures. Ground-intrusive activities include, but are not limited to, soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells.

Readings from air monitoring field equipment will be recorded and maintained on the appropriate Project Field forms or the Project Field Book and made part of the permanent field record for each project. Air monitoring instruments will be calibrated in accordance with manufacturer's recommendations before use and the calibration results will be documented. Air monitoring instruments will also be protected from surface contamination during use.

On-site work zone and off-site community air monitoring procedures and action levels are discussed in the following sections. Pertinent emergency response information including the telephone number of the Fire Department is included in the **Emergency Response Plan** (**Appendix A**).

8.1 On-Site Work Zone

On-site work zone air monitoring will either be performed periodically or continuously as determined by the SSHO based on the planned activity, location, and/or type of environmental media (i.e., soil, groundwater, sediment, soil vapor, air) encountered.

8.1.1 Monitoring

TRC personnel will utilize a handheld photoionization detector (PID) equipped with a 10.6 eV lamp (or approved other) to continuously monitor on-site work zone air for organic vapors during all intrusive activities (and designated non-intrusive activities) and only periodically during non-intrusive activities. Additional monitoring instruments, including a combustible gas meter and a particulate meter, may be added as situations or conditions warrant. In the absence of such monitoring, fugitive dust migration will be visually assessed during all intrusive work activities and appropriate respiratory protection for particulates shall be donned. Meter readings will be recorded and available for NYSDEC and NYSDOH personnel review.

TRC personnel will utilize a handheld Ludlum 2241-2 RK Ratemeter/Scaler equipped with a Detector 2 (44-2 gamma scintillator probe) (or approved other) to continuously monitor on-site work zone air for low level gamma radiation during all intrusive activities (and designated non-intrusive activities) and only periodically during non-intrusive activities. Periodically, a Ludlum Model 44-9 GM (Geiger-Mueller) Detector will be used to monitor on-site work zone air for alpha, beta, and gamma radiation. The dose rates and total dose from exposure to TENORM radiation and radioactive materials has been demonstrated to be significantly less than 1 milli-Sievert (100 mrem) at the Site. Because of this anticipated low total dose, no individual personnel monitoring (either external or internal) is required. As a point of reference, personnel monitoring is required under NYCRR Code 16 specifications when radiation doses are expected to exceed 500 mrem.

Other handheld instruments will be utilized as directed by the SSHO (i.e., CGI, carbon monoxide, oxygen meter, etc.).

8.1.2 Action Levels

During project-specific activities, ambient breathing zone concentrations within the On-Site Work Zone may at times, exceed the permissible exposure limits (PELs) established by OSHA for the individual COPCs (see **Table 1**), in which case respiratory protection will be required, and along with dermal protection, may be modified (upgraded or downgraded) by the SSHO. Sustained readings obtained in the on-site breathing zone may be interpreted (with regard to other Site conditions) as follows for TRC personnel:

Organic Vapor:

- Total atmospheric concentrations of unidentified vapors or gases yielding sustained readings from 0 to 1 ppm above background on the PID - continue operations under Level D (see **Appendix A**).
- Total atmospheric concentrations of unidentified vapors or gases yielding sustained readings from >1 ppm to 5 ppm above background on the PID (vapors not suspected of containing high levels of chemicals toxic to the skin) - continue operations under Level C (see **Appendix A**).
- Total atmospheric concentrations of unidentified vapors or gases yielding sustained readings of >5 ppm to 50 ppm above background on the PID - continue operations under Level B (see **Appendix A**), re-evaluate and alter (if possible) construction methods to achieve lower vapor concentrations.
- Sustained total atmospheric concentrations of unidentified vapors or gases above 50 ppm on the PID - discontinue operations and exit the work zone immediately.

Particulates (PM-10):

If used, the particulate meter will monitor on-site respirable dust concentrations during all intrusive activities and during handling of Site soil/fill. Action levels based on the instrument readings shall be as follows:

- Less than 50 mg/m^3 - continue field operations.
- 50-150 mg/m^3 - don dust/particulate mask or equivalent
- Greater than 150 mg/m^3 - don dust/particulate mask or equivalent. Initiate engineering controls to reduce respirable dust concentration (i.e., wetting of excavated soils or tools at discretion of SSHO).

8.2 Downwind Community Air

In addition to on-site monitoring within the work zone(s), monitoring at the downwind portion of the Site perimeter will be conducted. This will provide a real-time method for determination of vapor and/or particulate releases to the surrounding community as a result of ground intrusive activities.

8.2.1 Monitoring

Downwind community air monitoring will be performed in general accordance with the NYSDOH Generic Community Air Monitoring Plan provided as **Appendix C**. Unless discussed and approved otherwise by the NYSDEC and during all intrusive activities performed at the Site, organic vapor, and respirable particulates (PM-10), at a minimum, will be monitored on a *continuous basis* at the upwind and downwind perimeter of the exclusion zone. Organic vapor will be measured utilizing a PID and the respirable particulates will be measured utilizing a PM-10 meter.

Upwind and downwind air monitoring meters (i.e., PID and PM-10) will be capable of datalogging instantaneous readings as well as calculating 15-minute running averages. The downwind station will also be equipped with remote telemetry which will allow the electronic transmission (i.e., email

and/or text) of collected data, calculated 15-minute running averages, and any exceedance of the action level(s) to the appropriate field personnel for real-time accuracy. All readings will be recorded and available for NYSDEC and NYSDOH personnel review. In addition, fugitive dust migration will be visually assessed during all intrusive work activities.

If redevelopment activities include excavation of subgrade soil/fill beneath the final cover system (and demarcation layer, if present), radiation particulate monitoring may be conducted at the Site at the discretion of the SSHO. Three (3) particulate air sample locations will be used to collect particulate with low-flow air pumps (F&J low volume pump or equivalent) from one (1) upwind and two (2) downwind locations of the work area. Particulates in the air will be collected onto filter cassettes within the low-flow pumps that collect particulate as air is drawn in and passed through the cassettes. At the completion of each workday, a Ludlum Model 2929 scaler (or equivalent) will be used to measure the alpha, beta/gamma radiation in counts per minute (cpm) associated with the particulate collected on the filters.

8.2.2 Action Levels

The following criteria shall be adhered to for the protection of downwind receptors consistent with NYSDOH requirements (**Appendix C**):

Organic Vapor:

- If the sustained ambient air concentration of organic vapors at the downwind perimeter of the exclusion zone exceeds 5 ppm above background for the 15-minute average, work activities will be temporarily halted and monitoring continued. If the sustained organic vapor decreases below 5 ppm over background, work activities can resume with continued monitoring.
- If the sustained ambient air concentration of organic vapors at the downwind perimeter of the exclusion zone persists at levels greater than 5 ppm over background but less than 25 ppm for the 15-minute average, activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. Following these steps, work activities can resume provided that: the organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less, but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.
- If the sustained organic vapor level is above 25 ppm at the perimeter of the exclusion zone for the 15-minute average, the SSHO must be notified, and work activities shut down.

Particulates (PM-10)

- Fugitive dust migration will be visually assessed during all work activities.
- If the sustained downwind PM-10 particulate level is 100 micrograms per cubic meter (ug/m3) greater than the background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that the downwind PM-10 particulate levels do not exceed 150 ug/m3 above the upwind level and that visible dust is not migrating from the work area.
- If, after implementation of dust suppression techniques downwind PM-10 levels are greater than 150 ug/m3 above the upwind level, work activities must be stopped, and dust suppression controls re-evaluated. Work can resume provided that supplemental dust suppression measures and/or other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 ug/m3 of the upwind level and in preventing visible dust migration.

Radiation Particulates

- The results of the radiation particulate screening will be compared to the background count determination of the Site. An area near the Site, considered to be unimpacted by anthropogenic sources of radioactivity, will be selected as the "background" location. Ten (10), 1-minute static gamma readings will be collected using the Ludlum count ratemeter with both a collimated (3x3) and an uncollimated detector (2x2 or 3x3), if these options are available. The Mean and Upper Tolerance Level[1] (UTL) will be calculated utilizing USEPA's ProUCL software for the background location. *ProUCL version 5.2 is a comprehensive statistical software package with statistical methods and graphical tools to address many environmental sampling and statistical issues.* Elevated count rates exceeding the background UTL (collimated and/or uncollimated) identified at the Site would most likely indicate an anthropogenic source of radioactivity (i.e., TENORM).

8.3 Heavy Equipment Monitoring

If redevelopment activities include excavation of subgrade soil/fill beneath the final cover system (and demarcation layer) and TENORM is confirmed, surface measurements (before and after) will be made of construction equipment and personnel during the day to ensure TENORM levels are acceptable. Direct surface measurements of TENORM requiring restriction and decontamination of equipment are as follows (listed in Appendix A of NYSDOH Code 16):

- Alpha 20 disintegrations (particles or photons) per minute (DPM)/100 cm^2 removable
- Alpha 500 DPM/100 cm^2 total
- Beta 1000 DPM/100 cm^2 removable
- Beta 5000 DPM/100 cm^2 total

[1] The UTL is essentially the 95th percentile of the 95% confidence level of the distribution: roughly equal to three sigma above the mean. In environmental work it is used to distinguish between anthropogenic contamination and naturally occurring substances.

9.0 Spill Release / Response

This section of the HASP describes the potential for, and procedures related to, spills or releases of known or suspected petroleum and/or hazardous substances on the Site. The purpose of this section of the HASP is to plan appropriate response, control, countermeasures, and reporting, consistent with OSHA requirements in 29 CFR 1910.120(b)(4)(ii)(J) and (j)(1)(viii). The spill containment program addresses the following elements:

- Potential hazardous material spills and available controls.
- Initial notification and evaluation.
- Spill response.
- Post-spill evaluation.

9.1 Potential Spills and Available Controls

An evaluation was conducted to determine the potential for hazardous material and oil/petroleum spills at this Site. For this evaluation, hazardous materials posing a significant spill potential are considered to be:

- CERCLA Hazardous Substances as identified in 40 CFR Part 302, where such materials pose the potential for release in excess of their corresponding Reportable Quantity (RQ).
- Extremely Hazardous Substances as identified in 40 CFR Part 355, Appendix A, where such materials pose the potential for release in excess of their corresponding RQ.
- Hazardous Chemicals as defined under Section 311(e) of the Emergency Planning and Community Right-To-Know Act of 1986, where such chemicals are present or will be stored in excess of 10,000 lbs.
- Toxic Chemicals as defined in 40 CFR Part 372, where such chemicals are present or will be stored in excess of 10,000 lbs.
- Chemicals regulated under 6NYCRR Part 597, where such materials pose the potential for release in excess of their corresponding RQ.

Oil/petroleum products are considered to pose a significant spill potential whenever the following situations occur:

- The potential for a “harmful quantity” of oil (including petroleum and non-petroleum-based fuels and lubricants) to reach navigable waters of the U.S. exists (40 CFR Part 112.4). Harmful quantities are considered by USEPA to be volumes that could form a visible sheen on the water or violate applicable water quality standards.
- The potential for any amount of petroleum to reach any waters of NY State, including groundwater, exists. Petroleum, as defined by NY State in 6NYCRR Part 613, is a petroleum-based heat source, energy source, or engine lubricant/ maintenance fluid.
- The potential for any release, to soil or water, of petroleum from a bulk storage facility regulated under 6NYCRR Part 613. A regulated petroleum storage facility is defined by NY State as a site having stationary tank(s) and intra-facility piping, fixtures, and related equipment with an aggregate storage volume of 1,100 gallons or greater.

The evaluation indicates that, based on Site history and decommissioning records, a hazardous material spill and/or a petroleum product spill is not likely to occur during various environmental

efforts. However, the potential for petroleum product spill may exist if containerized, or to-be-containerized, petroleum product is released either by accident or container failure.

9.2 Initial Spill Notification & Evaluation

Any worker who discovers a hazardous substance or oil/petroleum spill will immediately notify the Project Manager and SSHO. The worker will, to the best of his/her ability, report the material involved, the location of the spill, the estimated quantity of material spilled, the direction/flow of the spill material, related fire/explosion incidents, if any, and any associated injuries. The Emergency Response Plan presented as **Appendix A** of this HASP will immediately be implemented if a release occurs.

Following the initial report of a spill, the Project Manager will make an evaluation as to whether the release exceeds the RQ. If the RQ is exceeded, the Project Manager will notify the Site owner and NYSDEC at 1-800-457-7362 within 2 hours of spill discovery. The Project Manager will also determine what additional agencies (e.g., USEPA) are to be contacted regarding the release, and will follow up with written reports as required by the applicable regulations.

9.3 Spill Response

For all spill situations, the following general response guidelines will apply:

- Only those personnel involved in overseeing or performing containment operations will be allowed within the spill area. If necessary, the area will be roped, ribboned, or otherwise blocked off to prevent unauthorized access.
- Appropriate PPE, as specified by the SSHO, will be donned before entering the spill area.
- Ignition points will be extinguished/removed if fire or explosion hazards exist.
- Surrounding reactive materials will be removed.
- Drains or drainage in the spill area will be blocked to prevent inflow of spilled materials or applied materials.

For minor spills, the Contractor (and/or Subcontractor) will maintain a spill response kit in the Field Office or other readily accessible storage location. The kit will consist of, at a minimum, a 50 lb. bag of “speedy dry” granular absorbent material, absorbent pads, shovels, empty 5-gallon pails and an empty open-top 55-gallon drum. Spilled materials will be absorbed and shoveled into a 55-gallon drum for proper disposal (NYSDEC approval will be secured for on-site treatment of the impacted soils/absorbent materials, if applicable). Impacted soils will be hand-excavated to the point that no visible signs of contamination remain and will be drummed with the absorbent.

In the event of a major release or a release that threatens surface water, a spill response Contractor (or Subcontractor) will be called to the Site. The spill responder may use heavy equipment (e.g., excavator, backhoe, etc.) to berm the soils surrounding the spill Site or create diversion trenching to mitigate overland migration or release to navigable waters. Where feasible, pumps will be used to transfer free liquid to storage containers. Spill control/cleanup contractors in the Western New York area that may be contacted for assistance include:

- Clean Harbors Environmental: (716) 855-2212
- Nature’s Way Environmental: (716) 937-6527
- Environmental Products and Services of Vermont, Inc.: (800) 577-4557

- The Environmental Service Group Inc. (NY): (716) 695-6720

9.4 Post-Spill Evaluation

If a reportable quantity of hazardous material or oil/petroleum is spilled as determined by the Project Manager, a written report will be prepared as indicated in Section 9.2. The report will identify the root cause of the spill, type and amount of material released, date/time of release, response actions, agencies notified and/or involved in cleanup, and procedures to be implemented to avoid repeat incidents. In addition, all re-useable spill cleanup and containment materials will be decontaminated, and spill kit supplies/disposable items will be replenished.

10.0 Heat / Cold Stress Monitoring

Since some of the work activities at the Site may be scheduled for both the summer and winter months, measures will be taken to minimize heat/cold stress to TRC employees. The SSHO and/or his or her designee will be responsible for monitoring TRC field personnel for symptoms of heat/cold stress.

10.1 Heat Stress Monitoring

Personal protective equipment may place an employee at risk of developing heat stress, a common and potentially serious illness often encountered at construction, landfill, waste disposal, industrial or other unsheltered sites. The potential for heat stress is dependent on several factors, including environmental conditions, clothing, workload, physical conditioning, and age. Personal protective equipment may severely reduce the body's normal ability to maintain temperature equilibrium (via evaporation and convection) and require increased energy expenditure due to its bulk and weight.

10.1.1 Mitigation

Proper training and preventive measures will mitigate the potential for serious illness. Heat stress prevention is particularly important because once a person suffers from heat stroke or heat exhaustion, that person may be predisposed to additional heat related illness. To avoid heat stress, the following steps should be taken:

- Adjust work schedules.
- Modify work/rest schedules according to monitoring requirements.
- Mandate work slowdowns as needed.
- Perform work during cooler hours of the day if possible or at night if adequate lighting can be provided.
- Provide shelter (air-conditioned, if possible) or shaded areas to protect personnel during rest periods.
- Maintain worker's body fluids at normal levels. This is necessary to ensure that the cardiovascular system functions adequately. Daily fluid intake must approximately equal the amount of water lost in sweat (i.e., eight fluid ounces must be ingested for approximately every 1 pound of weight lost). The normal thirst mechanism is not sensitive enough to ensure that enough water will be consumed to replace lost perspiration. When heavy sweating occurs, workers should be encouraged to drink more.
- Train workers to recognize the symptoms of heat related illness.

Heat-Related Illness - Symptoms:

- Heat rash may result from continuous exposure to heat or humid air.
- Heat cramps are caused by heavy sweating with inadequate electrolyte replacement. Signs and symptoms include muscle spasms, pain in the hands, feet, and abdomen.
- Heat exhaustion occurs from increased stress on various body organs including inadequate blood circulation due to cardiovascular insufficiency or dehydration. Signs and symptoms include: pale, cool, moist skin; heavy sweating; dizziness; nausea; fainting.
- Heat stroke is the most serious form of heat stress. Temperature regulation fails, and the body temperature rises to critical levels. Immediate action must be taken to cool the body before serious injury and death occur. Competent medical help must be obtained. Signs and symptoms are: red,

hot, usually dry skin; lack of or reduced perspiration; nausea; dizziness and confusion; strong, rapid pulse; coma.

The monitoring of personnel wearing protective clothing should commence when the ambient temperature is 70°F or above. For monitoring the body's recuperative ability to excess heat, one or more of the following techniques should be used as a screening mechanism.

- Heart rate may be measured by the radial pulse for 30 seconds as early as possible in the resting period. The rate at the beginning of the rest period should not exceed 100 beats per minute. If the rate is higher, the next work period should be shortened by 10 minutes (or 33%), while the length of the rest periods stays the same, If the pulse rate is 100 beats per minute at the beginning of the nest rest period, the following work cycle should be further shortened by 33%.
- Body temperature may be measured orally with a clinical thermometer as early as possible in the resting period. Oral temperature at the beginning of the rest period should not exceed 99.6°Ft. If it does, the next work period should be shortened by 10 minutes (or 33%), while the length of the rest period remains the same. However, if the oral temperature exceeds 99.6°F at the beginning of the next period, the work cycle may be further shortened by 33%. The oral temperature should be measured at the end of the rest period to make sure that it has dropped below 99.6°F. No TRC employee will be permitted to continue wearing semi-permeable or impermeable garments when his/her oral temperature exceeds 100.6°F.

10.2 Cold Stress Monitoring

Exposure to cold conditions may result in frostbite or hypothermia, each of which progresses in stages as shown below.

- **Frostbite** occurs when body tissue (usually on the extremities) begins to freeze. The three states of frostbite are:
  1) **Frost nip** - This is the first stage of the freezing process. It is characterized by a whitened area of skin, along with a slight burning or painful sensation. Treatment consists of removing the victim from the cold conditions, removal of boots and gloves, soaking the injured part in warm water (102 to 108°F) and drinking a warm beverage. Do not rub skin to generate friction/ heat.
  2) **Superficial Frostbite** - This is the second stage of the freezing process. It is characterized by a whitish gray area of tissue, which will be firm to the touch but will yield little pain. The treatment is identical for Frost nip.
  3) **Deep Frostbite** - In this final stage of the freezing process the affected tissue will be cold, numb, and hard and will yield little to no pain. Treatment is identical to that for Frost nip.
- **Hypothermia** is a serious cold stress condition occurring when the body loses heat at a rate faster than it is produced. If untreated, hypothermia may be fatal. The stages of hypothermia may not be clearly defined or visible at first, but generally include:
  1) Shivering
  2) Apathy (i.e., a change to an indifferent or uncaring mood)
  3) Unconsciousness
  4) Bodily freezing

Employees exhibiting signs of hypothermia should be treated by medical professionals. Steps that can be taken while awaiting help include:

1) Remove the victim from the cold environment and remove wet or frozen clothing. (Do this carefully as frostbite may have started.)

2) Perform active re-warming with hot liquids for drinking (Note: do not give the victim any liquid containing alcohol or caffeine) and a warm water bath (102 to 108 degrees Fahrenheit).

3) Perform passive re-warming with a blanket or jacket wrapped around the victim.

In any potential cold stress situation, it is the responsibility of the SSHO to encourage the following:

- Education of workers to recognize the symptoms of frostbite and hypothermia.
- Workers should dress warmly, with more layers of thin clothing as opposed to one thick layer.
- Personnel should remain active and keep moving.
- Personnel should be allowed to take shelter in a heated area, as necessary.
- Personnel should drink warm liquids (no caffeine or alcohol if hypothermia has set in).
- For monitoring the body's recuperation from excess cold, oral temperature recordings should occur:
- At the Site Safety Technician's discretion when suspicion is based on changes in a worker's performance or mental status.
- At a worker's request.
- As a screening measure, two times per shift, under unusually hazardous conditions (e.g., wind chill less than 20°F or wind chill less than 30°F with precipitation).
- As a screening measure, whenever anyone worker on-site develops hypothermia.

Any person developing moderate hypothermia (a core body temperature of 92°F) will not be allowed to return to work for 48 hours without the recommendation of a qualified medical doctor.

11.0 Site Control & Work Zones

The primary objective of site control is to minimize the exposure to potentially hazardous substances and/or situations. Supervision and controlling access to the work site is necessary to protect site personnel, visitors, and the public. Work zones around the areas designated for construction activities will be established daily and communicated to all employees and other Site users by the SSHO. It shall be each Contractor and Subcontractor's SSHO's responsibility to ensure that all Site workers are aware of the work zone boundaries and to enforce proper procedures in each area. The zones will include:

- **Exclusion Zone ("Hot Zone")** - The area where contaminated materials may be exposed, excavated, or handled and all areas where contaminated equipment or personnel may travel. Flagging tape will delineate the zone. All personnel entering the Exclusion Zone must wear the prescribed level of personal protective equipment identified in Section 7.
- **Contamination Reduction Zone** - The zone where decontamination of personnel and equipment takes place. Any potentially contaminated clothing, equipment and samples must remain in the Contamination Reduction Zone until decontaminated.
- **Support Zone** - The part of the site that is considered non-contaminated or "clean." Support equipment will be located in this zone, and personnel may wear normal work clothes within this zone.

In the absence of other task-specific work zone boundaries established by the SSHO, the following boundaries will apply to all investigation and construction activities involving disruption or handling of Site soils or groundwater:

- **Exclusion Zone:** 50-foot radius from the outer limit of the sampling/construction activity.
- **Contaminant Reduction Zone:** 100-foot radius from the outer limit of the sampling/construction activity.
- **Support Zone:** Areas outside the Contaminant Reduction Zone.

Access of non-essential personnel to the Exclusion and Contamination Reduction Zones will be strictly controlled by the SSHO. Only personnel who are essential to the completion of the task will be allowed access to these areas and only if they are wearing the prescribed level of protection. Entrance of all personnel must be approved by the SSHO.

The SSHO will maintain a Health and Safety Logbook containing the names of TRC workers and their level of protection. The zone boundaries may be changed by the SSHO as environmental conditions warrant, and to respond to the necessary changes in work locations on-site.

Appropriate security measures will be established in coordination with the site owner/operator and communicated to site personnel. The objective of these measures is to (1) protect the public from potential exposure to physical/chemical hazards; (2) avoid public interference with personnel and safe work practices; and (3) prevent theft or vandalism of equipment at the site.

12.0 Decontamination

12.1 TRC Employees

The degree of decontamination required is a function of a particular task and the environment within which it occurs. The following decontamination procedure will remain flexible, thereby allowing the decontamination crew to respond appropriately to the changing environmental conditions that may arise at the Site. All TRC personnel on-site shall follow the procedure below, or the Contractor's procedure (if applicable), whichever is more stringent.

- **Station 1 - Equipment Drop:** Deposit visibly contaminated (if any) re-useable equipment used in the contamination reduction and exclusion zones (tools, containers, monitoring instruments, radios, clipboards, etc.) on plastic sheeting.
- **Station 2 - Boots and Gloves Wash and Rinse:** Scrub outer boots and outer gloves. Deposit tape and gloves in waste disposal container.
- **Station 3 - Tape, Outer Boot and Glove Removal:** Remove tape, outer boots, and gloves. Deposit tape and gloves in waste disposal container.
- **Station 4 - Canister or Mask Change:** If a worker leaves the exclusion zone to change canister (or mask), this is the last step in the decontamination procedure. Worker's canister is exchanged, new outer gloves and boot cover donned, and worker returns to duty.
- **Station 5 - Outer Garment/Face Piece Removal**: Protective suit removed and deposited in separate container provided by Contractor or Subcontractor. Face piece or goggles are removed if used. Avoid touching your face with your fingers. Face piece and/or goggles deposited on plastic sheet. Hard hat removed and placed on plastic sheet.
- **Station 6 - Inner Glove Removal:** Inner gloves are the last personal protective equipment to be removed. Avoid touching the outside of the gloves with bare fingers. Dispose of these gloves in a waste disposal container.

Following PPE removal, personnel shall wash hands, face, and forearms with absorbent wipes. If field activities proceed for duration of 6 consecutive months or longer, shower facilities will be provided for worker use in accordance with OSHA 29 CFR 1910.120(n).

12.2 Medical Emergencies

In the event of a minor, non-life-threatening injury, personnel should follow the decontamination procedures as defined, and then administer first-aid.

In the event of a major injury or other serious medical concern (e.g., heat stroke), immediate first aid is to be administered and the victim transported to the hospital in lieu of further decontamination efforts unless exposure to a Site contaminant would be considered "Immediately Dangerous to Life or Health."

12.3 Field Equipment

The Contractor and/or Subcontractor will conduct decontamination of heavy equipment in the Contamination Reduction Zone, in accordance with its approved HASP. As a minimum, this will include manually removing heavy soil contamination, followed by steam cleaning on an impermeable pad.

TRC personnel will conduct decontamination of all tools used for sample collection purposes. It is expected that all tools will be constructed of nonporous, nonabsorbent materials (i.e., metal),

which will aid in the decontamination effort. Any tool or part of a tool made of porous, absorbent material (i.e., wood) will be placed into suitable containers and prepared for disposal.

Decontamination of bailers, split-spoons, spatula knives, and other tools used for environmental sampling and examination shall be as follows:

- Disassemble the equipment.
- Water wash to remove all visible foreign matter.
- Wash with detergent.
- Rinse all parts with distilled-deionized water.
- Allow equipment to air dry.
- Wrap all parts in aluminum foil or polyethylene.

13.0 Confined Space Entry

OSHA 29 CFR 1910.146 identifies a confined space as a space that is large enough and so configured that an employee can physically enter and do assigned work; has limited or restricted means for entry and exit; and not intended for continuous employee occupancy. Confined spaces include, but are not limited to, trenches, storage tanks, process vessels, pits, sewers, tunnels, underground utility vaults, pipelines, sumps, wells, and excavations.

Confined space entry by TRC employees is not anticipated to be necessary to complete typical environmental activities identified in Section 1.4. If the scope of work changes or confined space entry appears necessary, the Project Manager will be consulted to determine if feasible engineering alternatives to confined space entry can be implemented. If confined space entry by TRC employees cannot be avoided through reasonable engineering measures, task-specific confined space entry procedures will be developed, and a confined-space entry permit will be issued through TRC's ECR Safety Manager.

TRC employees shall not enter a confined space without these procedures and permits in place.

14.0 Fire Prevention & Protection

Recommended practices and standards of the National Fire Protection Association (NFPA) and other applicable regulations will be followed in the development and application of Project Fire Protection Programs. When required by regulatory authorities, the Project Manager will prepare and submit a Fire Protection Plan for the approval of the contracting officers, authorized representative, or other designated official. Essential considerations for the Fire Protection Plan will include:

Proper Site preparation and safe storage of combustible and flammable materials.

- Availability of coordination with private and public fire authorities.
- Adequate job-site fire protection and inspections for fire prevention.
- Adequate indoctrination and training of employees.

14.1 Equipment & Requirements

Fire extinguishers will be provided by each Contractor and/or Subcontractor and are required on all heavy equipment and in each field trailer. Fire extinguishers will be inspected, serviced, and maintained in accordance with the manufacturer's instructions. At a minimum, all extinguishers shall be checked monthly, weighed semi-annually, and recharged if necessary. Recharge or replacement shall be mandatory immediately after each use.

14.2 Flammable & Combustible Substances

All storage, handling or use of flammable and combustible substances will be under the supervision of qualified persons. All tanks, containers, and pumping equipment, whether portable or stationary, used for the storage and handling of flammable and combustible liquids, will meet the recommendations of the NFPA.

14.3 Hot Work

If the scope of work necessitates welding or blowtorch operation, the hot work permit presented in **Appendix D** will be completed by the SSHO and reviewed/issued by the Project Manager.

15.0 Emergency Response Plan

The TRC SSHO and/or Project Manager/Supervisor (depending on which is present) will have controlling authority during an emergency. In the SSO's absence, the Alternate SSO will be in charge.

In accordance with OSHA 29 CFR Part 1910, an Emergency Response Plan (ERP) is attached to this HASP as **Appendix A**. The site-specific ERP has been prepared for various environmental activities during Site redevelopment that are expected to be performed at the Site. The ERP describes potential emergencies that may occur at the Site; procedures for responding to those emergencies; roles and responsibilities during emergency response; and training all workers must receive in order to follow emergency procedures. The ERP also describes the provisions the Site has made to coordinate its emergency response planning with other Contractor's and Subcontractor's on-site and with off-site emergency response organizations.

The following sections are intended to support the ERP.

15.1 Evacuation Protocol

Evacuation protocol, routes and assembly areas from the site will be established by the SSO and communicated to Field Personnel during the Tailgate Safety Meeting(s) prior to initiating work. In the event of an evacuation, personnel will meet at pre-established assembly areas and the TRC SSO conduct a "head count" to see that everyone is accounted for. Contractor SSO is responsible for being able to provide an accurate headcount of contractor personnel.

Primary assembly area: *(to be determined)*

Secondary assembly area: *(to be determined)*

15.2 First Aid & CPR

TRC employees and Contractors with current First Aid and CPR certification and who are willing to provide First Aid and CPR will be asked to identify themselves at Tailgate Safety Meetings. Their names will be documented on the Pre-job Safety Briefing.

15.3 Emergency Medical Assistance

A list of emergency medical assistance sources has been established as part of this HASP. **Appendix A (Section 5.0)** lists the names, locations, and telephone numbers of emergency response organizations in the vicinity of the project site. The nearest hospital emergency room route map is presented within **Appendix A** as **Figure A-1**.

A vehicle shall be available onsite during work activities to transport injured personnel to the identified emergency medical facilities, if necessary. Company vehicles are to be equipped with a fire extinguisher and first aid kit.

15.4 Emergency Procedures

In the event of an accident, injury, or other emergency, remember to:

- Stop work and REMAIN CALM.
- Move personnel to a safe location (evacuation plan).
- Call 911 or notify other emergency facilities, as necessary.

- Address medical emergencies and apply first aid, if necessary.
    - Move injured or exposed person(s) from immediate area only if it is safe to do so.
    - If serious injury or life-threatening condition exists, call 911. Clearly describe the location, injury, and conditions to the dispatcher. Designate a person to direct emergency equipment to the injured person.
- Contain physical hazards.
    - Act only if hazard is minimal and you are trained to deal with the situation. Otherwise evacuate and wait for emergency services to arrive.
- Notify SSHO and initiate incident reporting procedures.
    - See **Appendix A (Section 5.0)** for contact information. In the event the SSHO is not available, the order of notification should be 1) Assistant SSHO, 2) TRC Project Manager, 3) TRC Office Safety Coordinator, 4) TRC ECR Safety Manager, and 5) National Safety Director.
    - TRC SSHO is to notify TRC Project Manager/Supervisor as soon as reasonably possible.
- Do not resume work until the SSHO has determined it is safe to do so.

15.5 Non-Emergency Medical Assistance

If an injury does occur and it is not life threatening, then the employee or employee's supervisor/project manager should contact WorkCare® within the first hour after an injury. WorkCare® information is proved in **Appendix B**. This information will help assist the injured employee by connecting them with instant access to a medically qualified professional to provide guidance on appropriate first aid measures and medications.

TABLES

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TABLE 1

TOXICITY DATA FOR CONSTITUENTS OF PRIMARY CONCERN

Health & Safety Plan
NYSDOT - 75 Evans Street Site
Hamburg, New York

Parameter	Synonyms	CAS No.	Concentration Limits [1]		
			PEL	TLV	IDLH
Inorganic Compounds: mg/m ^{3}					
Arsenic	*none*	7440-38-2	0.01	0.01	5
Copper	*none*	7440-50-8	0.1	0.2	200
Nickel	*none*	7440-02-0	1	0.2	10

Notes:

1. Concentration limits as reported by NIOSH Pocket Guide to Chemical Hazards, February 2004 (NIOSH Publication No. 97-140, fourth printing with changes and updates.

2. " -- " = concentration limit not available; exposure should be minimized to the extent feasible through appropriate engineering controls & PPE.

Explanation:

Ca = NIOSH considers constituent to be a potential occupational carcinogen.
C-## = Ceiling Level equals the maximum exposure concentration allowable during the work day.
IDLH = Immediately Dangerous to Life or Health.
TLV = Threshold Limit Value, established by American Conference of Industrial Hygienists (ACGIH), equals the maximum exposure concentration allowable for 8 hours/day @ 40 hours per week.
TLVs are the amounts of chemicals in the air that almost all healthy adult workers are predicted to be able to tolerate without adverse effects. There are three types.
TLV-TWA (TLV-Time-Weighted Average) which is averaged over the normal 8-hour day/40-hour work week. (Most TLVs.)
TLV-C or Ceiling limits are the concentration that should not be exceeded during any part of the working exposure.
Unless the initials "STEL" or "C" appear in the Code column, the TLV value should be considered to be the 8-hour TLV-TWA.
PEL = Permissible Exposure Limit, established by OSHA, equals the maximium exposure conconcentration allowable for 8 hours per day @ 40 hours per week

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TABLE 2

POTENTIAL ROUTES OF EXPOSURE TO COPCs

Health & Safety Plan
NYSDOT - 75 Evans Street Site
Hamburg, New York

Activity [1]	Direct Contact with Soil/Fill or Free Product	Inhalation of Vapors or Dust	Direct Contact with Groundwater
Potential Field Tasks			
1. Construction/excavation oversight	x	x	x
2. Community air monitoring		x	
3. Soil/fill screening with PID	x	x	x
4. Soil/fill screening with Ratemeter/Scaler	x	x	x
5. Site restoration	x	x	
6. Subsurface delineation oversight & sampling	x	x	x
7. Waste characterization sampling	x	x	x

Notes:
1. Activity as described in Section 1.4 of the Health and Safety Plan.

TABLE 3

REQUIRED LEVELS OF PROTECTION FOR ASSIGNED TASKS

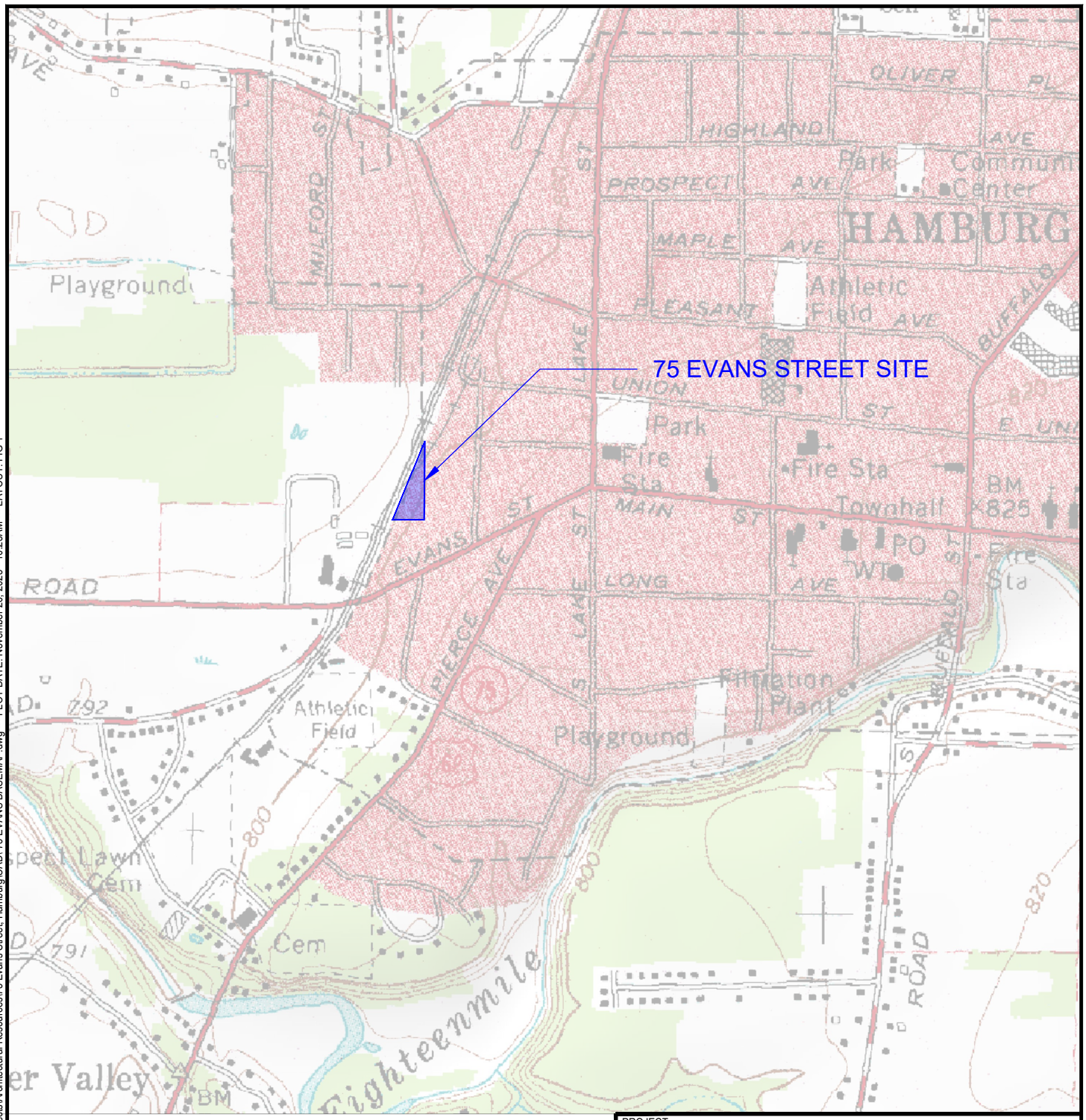
Health & Safety Plan
NYSDOT - 75 Evans Street Site
Hamburg, New York

Activity	Respiratory Protection[1]	Clothing	Gloves[2]	Boots[2, 3]	Other Required PPE/Modifications[2, 4]
Tasks					
1. Construction oversight	Level D (upgrade to Level C if necessary)	Work Uniform or Tyvek	none	outer: none inner: STSS	SGSS
2. Community air monitoring	Level D (upgrade to Level C if necessary)	Work Uniform or Tyvek	none	outer: none inner: STSS	SGSS
3. Soil/fill screening with PID	Level D (upgrade to Level C if necessary)	Work Uniform or Tyvek	none	outer: none inner: STSS	SGSS
4. Soil/fill screening with Ratemeter/Scaler	Level D (upgrade to Level C if necessary)	Work Uniform or Tyvek	none	outer: none inner: STSS	SGSS
5. Site restoration	Level D (upgrade to Level C if necessary)	Work Uniform or Tyvek	none	outer: none inner: STSS	SGSS
6. Subsurface delineation oversight & sampling	Level D (upgrade to Level C if necessary)	Work Uniform or Tyvek	N	outer: none inner: STSS	SGSS
7. Waste characterization sampling	Level D (upgrade to Level C if necessary)	Work Uniform or Tyvek	N	outer: none inner: STSS	SGSS

Notes:

1. Respiratory equipment shall conform to guidelines presented in Section 7.0 of this HASP. The Level C requirement is an air-purifying respirator equiped with organic compound/acid gas/dust cartridge.
2. HH = hardhat; L= Latex; L/N = latex inner glove, nitrile outer glove; N = Nitrile; S = Saranex; SG = safety glasses; SGSS = safety glasses with sideshields; STSS = steel toe safety shoes; FS = face shield; GG = goggles.
3. Latex outer boot (or approved overboot) required whenever contact with contaminated materials may occur. SSHO may downgrade to STSS (steel-toed safety shoes) if contact will be limited to cover/replacement soils.
4. Dust masks shall be donned as directed by the SSHO (site safety and health officer) or site safety technician whenever potentially contaminated airborne particulates (i.e., dust) are present in significant amounts in the breathing zone. Goggles may be substituted with safety glasses w/side-shields whenever contact with contaminated liquids is not anticipated.

FIGURES



8.5x11 -- USER: BHann -- ATTACHED XREFS: Hamburg2 (REV); V; Hamburg (REV) -- ATTACHED IMAGES: 75 Evans TOPO
DRAWING NAME: C:\Users\BHann\OneDrive - TRC\Documents\0 - Projects\Architectural Resources\75 Evans Street, Hamburg\CAD\ 75 EVANS BASEMAP.dwg -- PLOT DATE: November 26, 2025 - 10:25AM -- LAYOUT: FIG 1
Version: 2017-10-21

N

1000 0' 1000 2000

SCALE: 1 INCH = 1000 FEET
SCALE IN FEET
(approximate)

PROJECT:

HEALTH & SAFETY PLAN
75 EVANS STREET SITE
HAMBURG, NEW YORK

TITLE:

SITE LOCATION & VICINITY MAP

DRAWN BY:	BCH	PROJ NO.:	648416.0000.0000
CHECKED BY:	BMG		
APPROVED BY:	BCH		**FIGURE 1**
DATE:	NOVEMBER 2025		

TRC
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Suite 280
West Seneca, NY 14224
Phone: 716.289.2409
www.trccompanies.com

FILE NO.: 75 EVANS BASEMAP.dwg

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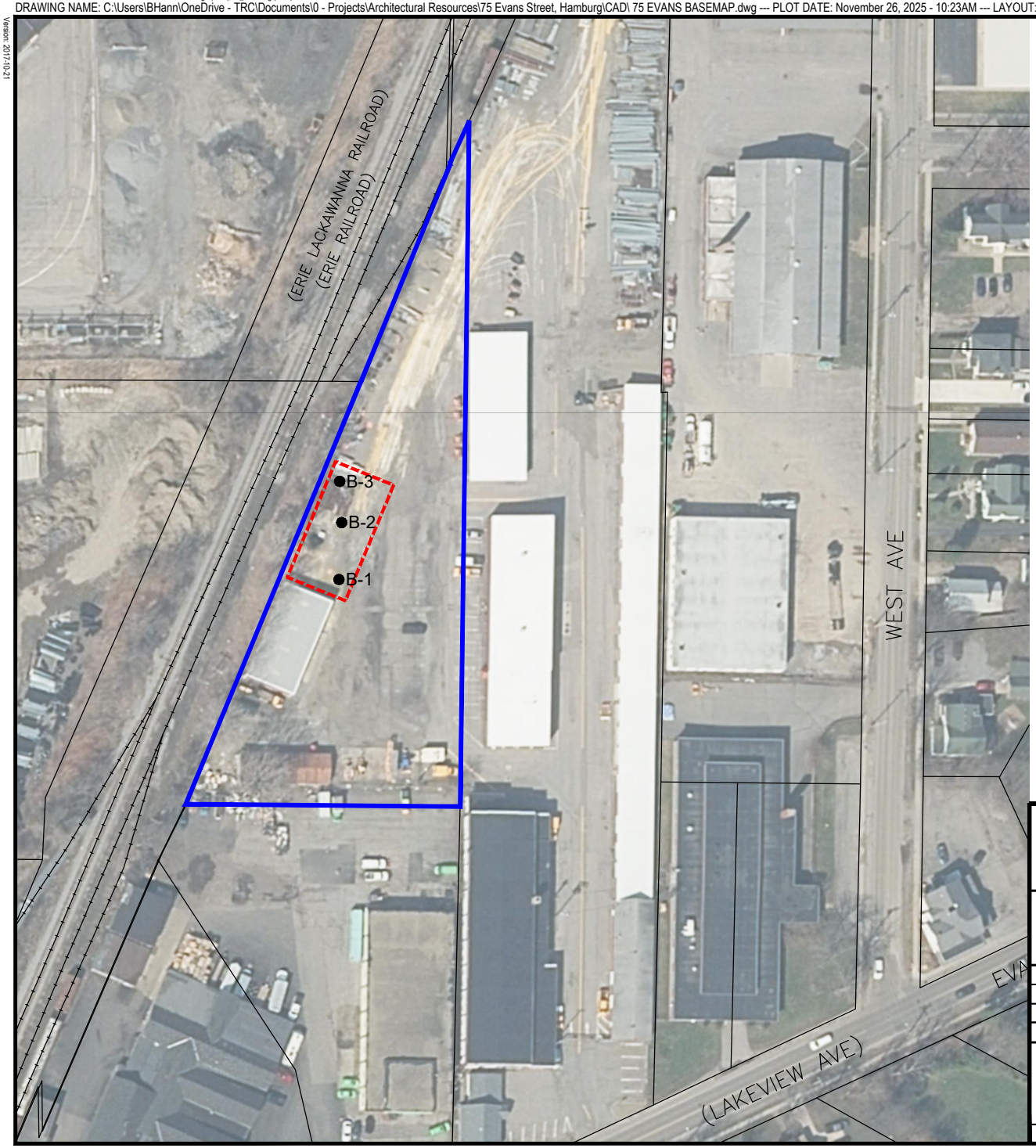
DRAWING NAME: C:\Users\BHann\OneDrive - TRC\Documents\0 - Projects\Architectural Resources\75 Evans Street, Hamburg\CAD\ 75 EVANS BASEMAP.dwg --- PLOT DATE: November 26, 2025 - 10:23AM --- LAYOUT: FIG 2
Version: 2017-10-21



LEGEND:

- PROPERTY BOUNDARY
- PARCEL BOUNDARY
- B-1 ● SOIL BORING (ENCORUS/GLYNN 2024)
- PROPOSED BUILDING FOOTPRINT (APPROX.)

N

120' 0' 120' 240'

SCALE: 1 INCH = 120 FEET
SCALE IN FEET
(approximate)

PROJECT:
HEALTH & SAFETY PLAN
75 EVANS STREET SITE
HAMBURG, NEW YORK

TITLE:
SITE PLAN

DRAWN BY:	BCH	PROJ NO.:	648416.0000.0000
CHECKED BY:	BMG		
APPROVED BY:	BCH		**FIGURE 2**
DATE:	NOVEMBER 2025		

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Appendix A

Emergency Response Plan

Emergency Response Plan

NYSDOT Storage Building
75 Evans Street Site
Hamburg, New York

Prepared For:
Architectural Resources, D.P.C.
505 Franklin Street
Buffalo, New York 14202

Prepared By:
TRC Engineers, Inc.
1090 Union Road, Suite 280
West Seneca, NY 14224

November 2025



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FIGURES

Figure A-1 Hospital Route Map

1.0 General

This site-specific Emergency Response Plan (ERP) is referenced as **Appendix A** to the Site Health and Safety Plan (HASP) prepared for Operation, Monitoring, and Maintenance (OM&M) Activities expected to be performed at the 75 Evans Street Site in Hamburg, New York. This ERP describes potential emergencies that may occur at the Site; procedures for responding to those emergencies; roles and responsibilities during emergency response; and training all workers must receive in order to follow emergency procedures. This ERP also describes the provisions this Site has made to coordinate its emergency response planning with other Contractor's and Subcontractor's on-site and with off-site emergency response organizations.

This ERP is consistent with the requirements of 29 CFR 1910.120(l) and provides the following site-specific information:

- Pre-emergency planning.
- Personnel roles, lines of authority, and communication.
- Emergency recognition and prevention.
- Safe distances and places of refuge.
- Evacuation routes and procedures.
- Decontamination procedures.
- Emergency medical treatment and first aid.
- Emergency alerting and response procedures.
- Critique of response and follow-up.
- Emergency personal protective equipment (PPE) and equipment.

2.0 Pre-Emergency Planning

This Site has been evaluated for potential emergency occurrences, based on Site hazards, required work tasks, Site topography, and prevailing weather conditions. The results of that evaluation indicate the potential for the following Site emergencies to occur at the locations indicated.

Type of Emergency:

1. Medical, due to physical injury

Source of Emergency:

1. Slip/trip/fall

Location of Source:

1. Non-specific

3.0 On-Site Emergency Response Equipment

Emergency procedures may require specialized equipment to facilitate worker rescue, contamination control and reduction, or post-emergency clean up. Emergency response equipment available on the Site is listed below. The equipment inventory and storage locations are based on the potential emergencies described above. This equipment inventory is designed to meet on-site emergency response needs and any specialized equipment needs that off-site responders might require because of the hazards at this Site but not ordinarily stocked.

Any additional PPE required and stocked for emergency response is also listed in below. During an emergency, the Emergency Response Coordinator (ERC) is responsible for specifying the level of PPE required for emergency response. At a minimum, PPE used by emergency responders will comply with Section 7.0 of the HASP. Emergency response equipment is inspected at regular intervals and maintained in good working order. The equipment inventory is replenished as necessary to maintain response capabilities.

Emergency Equipment	Quantity	Location
Spill Response Kit	1	Site Vehicle
First Aid Kit	1	Site Vehicle
Chemical Fire Extinguisher	1 (minimum)	All heavy equipment and Site Vehicle

Emergency PPE	Quantity	Location
Full-face respirator	1 for each worker	Site Vehicle
Chemical-resistant suits	4 (minimum)	Site Vehicle

4.0 Emergency Planning Maps

Due to the vast size of the site and likely performance of the work on an area-specific basis, area-specific maps of the site will be developed prior to initiation of field activities. The maps will be clearly marked with critical on-site emergency planning information. Emergency evacuation route(s), places of refuge, assembly point(s), and the locations of key site emergency equipment will be identified. Site zone boundaries will be shown to alert responders to known areas of contamination. Major topographical features and the direction of prevailing winds/weather conditions that could affect emergency response planning will also be marked on the map(s). Once completed, the map will be discussed with field team personnel and posted at Site entry points, within the on-site field trailer (if present), placed inside TRC and personal field vehicles, and/or at strategic locations throughout the work site.

5.0 Emergency Contacts

The following identifies the emergency contacts for this ERP.

Emergency Telephone Numbers:

ECR Safety Manager: ***Dave Sullivan***
Work: (978) 656-3565
Mobile: (978) 758-2809

Project Manager: ***Bryan C. Hann, P.G.***
Mobile: (716) 870-1165

Site Safety and Health Officer (SSHO): ***TBD***
Work: (716) TBD
Mobile: (716) TBD

Assistant SSHO: ***TBD***
Work: (716) TBD
Mobile: (716) TBD

MERCY HOSPITAL (ER): ..... (716) 826-7000
FIRE: 911
AMBULANCE: 911
BUFFALO POLICE: 911
STATE EMERGENCY RESPONSE HOTLINE: ..... (800) 457-7362
NATIONAL RESPONSE HOTLINE: ..... (800) 424-8802
NYSDOH: ..... (716) 847-4320
NYSDEC: ..... (716) 851-7200
NYSDEC 24-HOUR SPILL HOTLINE: ..... (800) 457-7362

The Site location is:

75 Evans Street
Hamburg, New York 14075

Site Phone Number: (Insert Cell Phone or Field Trailer): _____

6.0 Emergency Alerting & Evacuation

Internal emergency communication systems are used to alert workers to danger, convey safety information, and maintain Site control. Any effective system can be employed. Two-way radio headsets or field telephones are often used when work teams are far from the command post. Hand signals and air-horn blasts are also commonly used. Every system must have a backup. It shall be the responsibility of each Contractor and/or Subcontractor's SSHO to ensure all personnel entering the site understand an adequate method of internal communication. Unless all personnel are otherwise informed, the following signals shall be used.

- Emergency signals by portable air horn, siren, or whistle: two short blasts, personal injury; continuous blast, emergency requiring site excavation.
- Visual signals: hand gripping throat, out of air/cannot breathe; hands on top of head, need assistance; thumbs up, affirmative/everything is OK; thumbs down, no/negative; grip partner's wrist or waist, leave area immediately.

If evacuation notice is given, Site workers leave the worksite with their respective buddies, if possible, by way of the nearest exit. Emergency decontamination procedures detailed in Section 12.0 of the HASP are followed to the extent practicable without compromising the safety and health of Site personnel. The evacuation routes and assembly area will be determined by conditions at the time of the evacuation based on wind direction, the location of the hazard source, and other factors as determined by rehearsals and inputs from emergency response organizations. Wind direction indicators are located so that workers can determine a safe up wind or cross wind evacuation route and assembly area if not informed by the emergency response coordinator at the time the evacuation alarm sounds. Since work conditions and work zones within the site may be changing on daily basis, it shall be the responsibility of the construction SSHO to review evacuation routes and procedures as necessary and to inform all Orion workers of any changes.

Personnel exiting the Site will gather at a designated assembly point. To determine that everyone has successfully exited the site, personnel will be accounted for at the assembly site. If any worker cannot be accounted for, notification is given to the SSHO so that appropriate action can be initiated. Contractors and Subcontractors on the Site have coordinated their ERPs to ensure that these plans are compatible, and that source(s) of potential emergencies are recognized, alarm systems are clearly understood, and evacuation routes are accessible to all personnel relying upon them.

7.0 Extreme Weather Conditions

In the event of adverse weather conditions, the SSHO in conjunction with the Contractor and/or Subcontractor's SSHO will determine if engineering operations can continue without sacrificing the health and safety of site personnel. Items to be considered prior to determining if work should continue include but are not limited to:

- Potential for heat/cold stress.
- Weather-related construction hazards (e.g., flooding, or wet conditions producing undermining of structures or sheeting, high wind threats, etc.).
- Limited visibility.
- Potential for electrical storms.
- Extreme high winds.
- Limited site access/egress (e.g., due to heavy snow)

8.0 Emergency Medical Treatment & First Aid

8.1 Personnel Exposure

The following general guidelines will be employed in instances where health impacts threaten to occur acute exposure is realized:

- Skin Contact: Use copious amounts of soap and water. Wash/rinse affected area for at least 15 minutes. Decontaminate and provide medical attention. Eyewash stations will be provided on site. If necessary, transport to Hospital.
- Inhalation: Move to fresh air and, if necessary, transport to Hospital.
- Ingestion: Decontaminate and transport to Hospital.

8.2 Personal Injury

Minor first-aid will be applied on-site as deemed necessary. In the event of a life-threatening injury, the individual should be transported to Hospital via ambulance. The SSHO will supply available chemical specific information to appropriate medical personnel as requested.

First aid kits will conform to Red Cross and other applicable good health standards and shall consist of a weatherproof container with individually sealed packages for each type of item. First aid kits will be fully equipped before being sent out on each job and will be checked weekly by the SSHO to ensure that the expended items are replaced.

8.3 Directions to Hospital

The following directions describe the best route from the Site to **Mercy Hospital of Buffalo Emergency Room** (approximately 12.2 miles or 19 minutes) (see **Figure A-1**):

- Head north on West Avenue.
- Turn right onto Linwood Avenue.
- Turn left onto Lake Street. Continue onto NY-75 North (Camp Road) approximately 0.7 miles.
- Use right lane to take the ramp onto I-90 East.
- Continue on I-90 East to West Seneca.
- Take Exit 55 for Ridge Road onto US-219 North toward Lackawanna/West Seneca.
- Take first exit onto Ridge Road.
- Continue straight onto Slade Avenue.
- Turn left onto Potters Road.
- Continue straight onto Abbott Road
- Turn left onto Lorraine Avenue
- Hospital Emergency Room on the left (565 Abbott Road, Buffalo, NY 14220).

9.0 Emergency Response Critique & Record Keeping

Following an emergency, TRC's ECR Safety Manager, Project Manager, and SSHO shall review the effectiveness of this ERP in addressing notification, control, and evacuation requirements. Updates and modifications to this ERP shall be made accordingly. It shall be the responsibility of each Contractor and/or Subcontractor to establish and assure adequate records of the following:

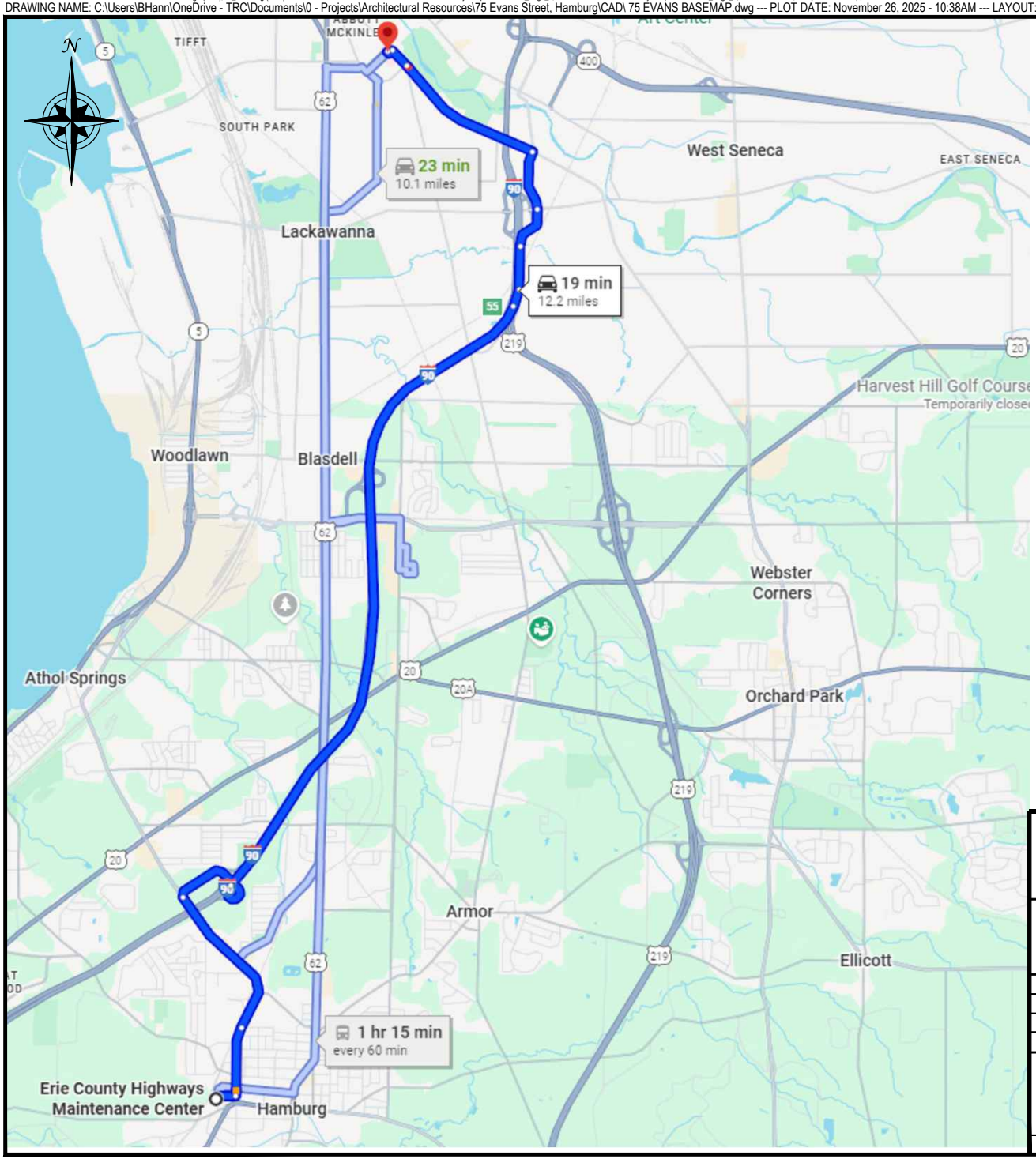
- Occupational injuries and illnesses.
- Accident investigations.
- Reports to insurance carrier or State compensation agencies.
- Reports required by the client.
- Records and reports required by local, state, federal and/or international agencies.
- Property or equipment damage.
- Third party injury or damage claims.
- Environmental testing logs.
- Explosive and hazardous substances inventories and records.
- Records of inspections and citations.
- Safety training.

10.0 Emergency Response Training

All persons who enter the worksite, including visitors, shall receive a site-specific briefing (i.e., Tailgate Safety Meeting) about anticipated emergency situations and the emergency procedures by the SSHO. Where this Site relies on off-site organizations for emergency response, the training of personnel in those off-site organizations has been evaluated and is deemed adequate for response to this Site.

FIGURES

8.5x11 --- USER: BHann --- ATTACHED XREF'S: Hamburg2 (REV); V_Hamburg (REV) --- ATTACHED IMAGES: 75 Evans Street Site to Mercy Hospital directions_Page_1; 75 Evans Street Site to Mercy Hospital directions_Page_2; 75 Evans TOPO; Hospital Route Map;
DRAWING NAME: C:\Users\BHann\OneDrive - TRC\Documents\0 - Projects\Architectural Resources\75 Evans Street, Hamburg\CAD\ 75 EVANS BASEMAP.dwg --- PLOT DATE: November 26, 2025 - 10:38AM --- LAYOUT: FIG A-1
Version: 2017-10-21



Erie County Highways Maintenance Center
50 West Ave, Hamburg, NY 14075

⚠ This route has tolls.

Get on I-90 E from NY-75 N/Camp Rd — 6 min (3.1 mi)

1. Head north on West Ave toward Linwood Ave — 161 ft
2. Turn right onto Linwood Ave — 0.2 mi
3. Turn left onto Lake St — 0.6 mi
4. Continue onto NY-75 N/Camp Rd
   ⓘ Pass by Burger King (on the right in 0.7 mi) — 1.4 mi
5. Use the right lane to take the ramp onto I-90 E
   ⚠ Toll road — 0.9 mi

Continue on I-90 E to West Seneca. Take the Ridge Road exit from US-219 N — 7 min (6.9 mi)

6. Merge onto I-90 E
   ⚠ Toll road — 6.0 mi
7. Take exit 55 for Ridge Rd toward Lackawanna/W Seneca
   ⚠ Toll road — 0.2 mi
8. Merge onto US-219 N — 0.4 mi
9. Take the Ridge Road exit toward East West Seneca — 0.4 mi

Continue on Slade Ave to your destination in Buffalo — 6 min (2.1 mi)

10. Continue onto Slade Ave — 0.5 mi
11. Turn left onto Potters Rd — 1.4 mi
12. Continue onto Abbott Rd — 0.2 mi
13. Turn left onto Lorraine Ave — 233 ft
14. Turn left
    ⓘ Destination will be on the right — 108 ft

Mercy Hospital of Buffalo

PROJECT:

EMERGENCY RESPONSE PLAN
75 EVANS STREET SITE
HAMBURG, NEW YORK

TITLE:

HOSPITAL ROUTE MAP

DRAWN BY:	BCH	PROJ NO.:	648416.0000.0000
CHECKED BY:	BMG		
APPROVED BY:	BCH		**FIGURE A-1**
DATE:	NOVEMBER 2025		

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West Seneca, NY 14224
Phone: 716.289.2409
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Appendix B

TRC Incident Reporting Procedure & Forms

1. PURPOSE

This compliance program outlines the responsibilities, help TRC employees understand how to respond to safety incidents and prevent recurrences by raising awareness of the risks associated with key incidents, process for investigating work-related incidents, developing corrective actions, and communicating lessons learned throughout the organization. Communicating lesson learned provides practical solutions to improve behavior and mitigate safety hazards.

This program also contains provisions for employee exposure and medical records. In conjunction to what is written in this compliance program, TRC will follow the regulations of 29 CFR 1904.39: Recording and Reporting Occupational Injuries and Illness and 29 CFR 1020 Access to Employee Exospore and Medical Records.

2. SCOPE

This program applies to all TRC personnel and projects in the United States.

3. DEFINITIONS

Employee Exposure Record: A record containing any of the following kinds of information: environmental (workplace) monitoring or measuring of a toxic substance or harmful physical agent; biological monitoring results which directly assess the absorption of a toxic substance or harmful physical agent by body systems; safety data sheets associated with exposures in the workplace; or chemical inventory or any other record which reveals where and when used and the identity of a toxic substance or harmful physical agent.

Employee Medical Record: A record concerning the health status of an employee which is made or maintained by a physician, nurse, or other health care personnel, or technician, as defined by 1910.1020(c)(6)(i).

Environmental Incident: An unplanned event that caused, or could likely have caused, a negative impact on the environment receptor, e.g. air, water, land, wildlife, or local habitat involving TRC.

Illness: Unhealthy condition; poor health; indisposition; sickness.

Injury: Wound or trauma; damage inflicted on the body by an external force.

Near Miss: A situation or condition that has a potential for an incident to occur. No property was damaged, and no injury or illness was sustained, but where given a change in time or position, an environmental incident, property damage or personal injury could have occurred.

Nonconformance: A deviation from applicable legal and other requirements, which include TRC's Health and Safety Management System and client expectations.

Property Damage: Damage to company, client, or personal property through another's negligence, willful destruction, or by some act of nature involving TRC.

Safe Catch: A near miss or incident that has not resulted in any personal injury. Unsafe working conditions, unsafe employee behaviors, improper use of equipment or use of malfunctioning equipment have the potential to cause work related injuries.

Safety Incident: A work-related event in which an injury or illness occurred or could have likely occurred. Subcategories of incidents include near misses and safe catches.

Serious Incident: A work-related event which requires medical treatment beyond first aid for any party involved; or environmental events which require TRC to notify a regulatory agency.

Severe Injury: A work-related incident which requires in inpatient hospitalization, transportation via ambulance, or a fatality.

Safety Reporting System (SRS): TRC digital platform that provides employees with a centralized online portal for reporting incidents, safe catches, and safe recognition events.

4. ROLES AND RESPONSIBILITIES

4.1 The Corporate EHS Team is responsible for the following:

- Lead or facilitate investigations for incidents and safety related non-conformances to identify root causes and corrective actions.
- Facilitate the corrective action process with the affected employees.
- Assist members of TRC's Health and Safety Network with the development of Lessons Learned Report.
- Coordinate audits of field work in accordance with TRC's Health and Safety Management System to confirm that the corrective actions were implemented and are effectively controlling the hazard(s).
- Coordinating the access to employee medical and exposure records. Retaining employee medical and exposure records and providing access these records upon request.
- Assist with developing and communicating the Lessons Learned Report to the entire company.

4.2 Health and Safety Network is responsible for the following:

- Assisting in incident investigations.
- Development of Lessons Learned Reports.
- Communicating the Lessons Learned Report in safety meetings.
- Educating employees on employees' right to access employee medical and exposure records.

4.3 Supervisors are responsible for the following:

- Communicate with the Corporate Safety Department when an incident occurs.

- Initiating and assisting with investigating incidents and non-conformances.
- Assisting with developing corrective actions.
- Assist the Health and Safety Network with the dissemination of the Lessons Learned Report.

4.4 Employees are responsible for the following:

- Participating in incident investigation and development of corrective actions.
- Reviewing lessons learned and supporting corrective actions.
- Contacting their supervisor or a member of the Corporate Safety Department to request access to their employee medical or exposure records.

5. PROCEDURE

5.1 Incident Reporting:

The Incident Reporting Matrix identifies, based on type of incident, who within corporate management shall be verbally notified and when. It also specifies which type of report from the field shall be completed based on the type of incident. TRC employees must report all incidents and potential injuries to their supervisor immediately and follow the Incident Response Flow Chart (**Appendix A**).

INCIDENT NOTIFICATION MATRIX

TYPE OF INCIDENT	WHO TO NOTIFY	WHEN	SRS SUBMITTAL
Minor First Aid	Project Manager/Supervisor, Corporate EHS, WorkCare, Client If Required	ASAP	Yes
In-patient Hospitalization Amputation Loss of an Eye	Project Manager/Supervisor, National Safety Director, OSHA	Within 24 hours to OSHA and Client (host facility)	Yes
Fatality	Project Manager/Supervisor, National Safety Director, OSHA	Within 8 hours to OSHA	Yes

OSHA defines "in-patient hospitalization" as a formal admission to the in-patient service of a hospital or clinic for care or treatment. Treatment in an emergency room only is not reportable.

OSHA defines "amputation" as the traumatic loss of all or part of a limb or other external body part. This would include fingertip amputations with or without bone loss; medical amputations resulting from irreparable damage; and amputations of body parts that have since been reattached. When there is a health care professional's diagnosis available, TRC should rely on that diagnosis.

5.2 Emergency Procedures:

In the event of an emergency:

- Stop work and REMAIN CALM.
- Move personnel to a safe location.
- For life threatening injuries and medical emergencies call 911 or go to the closest emergency room.
- If serious injury or life-threatening condition exists, call 911. Clearly describe the location, injury and conditions to the dispatcher. Designate a person to direct emergency equipment to the injured person.
- Address medical emergencies and apply first aid, if necessary. Contact WorkCare for all injuries, even when symptoms are minor.
- Contain physical hazards.
    - Act only if hazard is minimal and you are trained to deal with the situation. Otherwise evacuate and wait for emergency services to arrive.
- Do not resume work until Project Manager/Supervisor has determined it safe to do so and appropriate corrective actions have been implemented to prevent the incident from occurring again.

5.3 Non-Emergency Procedures:

In the event of a non-emergency injury or incident:

- Employees:
    - Stop work immediately;
    - Contact Project Manager/Supervisor; and
    - Contact WorkCare for all injuries, even when symptoms are minor.
- Project Manager/Supervisor:
    - Immediately notify the TRC National Safety Director and to the injured employee's direct supervisor.
    - Work with employee(s) to mitigate hazard(s) which caused incident and institute corrective actions.

5.4 Incident Reporting to OSHA

- Fatality
  - The Occupational Safety and Health Administration (OSHA) is to be contacted within eight hours after the fatality of any employee because of a work-related incident.
- Severe Injury
  - OSHA and the Client (host facility) is to be contacted within 24 hours after a severe injury to any employee because of a work-related incident.
- Methods of Contacting OSHA
  - By telephone or in person to the OSHA Area Office that is nearest to the site of the incident.
  - By telephone to the OSHA toll free central telephone number, 1-800-321-OSHA (6742).
  - By electronic submission using the reporting application located on OSHA's public website at www.osha.gov.

6. INCIDENT INVESTIGATION

All incidents will be investigated to the appropriate level with regards to incident severity. While all incidents should be investigated, the extent of such investigation shall reflect the seriousness of the incident utilizing a root cause analysis process or other similar method determined by the Corporate Safety Team. After immediate rescue or response, actions to prevent further loss will occur if the scene is safe. For example, maintenance personnel should be summoned to assess integrity of buildings and equipment, engineering personnel to evaluate the need for bracing of structures, and special equipment/response requirements such as safe rendering of hazardous materials or explosives employed. In the case of a major injury or incident the scene of the event should be closed off and kept "as is" at the time of the incident. This is vital for effective incident investigation, Evidence such as people, positions of equipment, parts, and papers must be preserved, secured, and collected through notes, photographs, witness statements, flagging, and impoundment of documents and equipment. All shall be dated.

The impacted employee, and the employee's supervisor are to complete the required TRC Incident Forms (General Information, Auto Incident, Injury / Illness, Property Damage, Supervisors Investigation) in the SRS Portal within 24 hours of the incident and forward to the National Safety Director. Work-related incidents shall be investigated in a timely manner. Incidents that resulted in injury or illness, including first aid, early-stage symptoms (i.e., sore muscle, rash, etc.), and tick or insect bites will be documented using the TRC Injury Illness Form in the SRS Portal.

As part of the incident investigation, it will be necessary to interview the injured or affected employee along with any other employees who may have been involved or who witnessed the incident. Remember that you are working to know the facts of the situation; "fault" is not a concern. Below are some guidelines to assist in conducting the interview:

- Conduct interview(s) as soon as possible after the incident.
- Focus on interviewing person(s) most directly involved with the incident.
- Be respectful of the interviewee's physical and emotional state; be sympathetic if the person has suffered an injury.

6.1 Initiating an Interview:

- Introduce yourself and ask the person if they can help you determine what happened.
- If possible, conduct the interview in a private location.
- Put the interviewee at ease by:
  - Explaining that getting the facts may help prevent a recurrence;
  - Explaining that information will be shared only on a need-to-know basis;
  - Explaining that the employee will remain anonymous on any communications of lessons learned; and
  - Remaining cordial and professional even if the interviewee is not cooperative.

6.2 Developing the Narrative:

- Collect the facts and ask the interviewee to relate the events of the incident in his or her own words. Allow the person to complete each statement and do not fill silences with leading questions.
- Construct a timeline. Pay close attention to the sequence of events in order to establish a timeline and identify critical elements for future clarification or expansion.
- Take photos of the area and equipment involved. Avoid taking photos of people.
- Clarify critical elements:
- Based on the interviewee's statements, prompt him/her to elaborate on critical information.
  - Ask open-ended questions to help clarify important information.
  - Avoid using emotive or judgmental language.
  - Do not prompt interviewee to speculate. Record only what the interviewee considers factual.
- Ask control questions. Ask questions for which you already know the answer, to give you a basis for evaluating the current reliability of the interviewee's statements.

- Confirm accuracy. Periodically summarize events for the interviewee to confirm the information has been accurately recorded.

6.3 Collecting Additional Information:

- Once the narrative has been developed, ask the interviewee how the incident could have been prevented.
- Thank the interviewee for cooperating with the investigation.
- Exchange contact information so that both parties can follow up; the interviewer may have additional questions, and the interviewee may remember additional details after the interview has been concluded.

6.4 Causal Factor Analysis:

- After the incident investigation has been completed, the information gathered should allow for the development of the causal factors. Below is a summary of the causal factor analysis process:
  - Identifying the causal factors will help determine the appropriate corrective actions.
  - In many cases more than one causal factor is identified.
  - Focus on the causal factors that are most applicable to the incident.

6.5 Identifying the Causal Factors:

It is important to identify the causal factor(s), Part I from Appendix D, related to the incident. Using this tool will allow for you to better determine the cause of the incident and help to focus on the appropriate corrective actions. The National Safety Director will help in determining applicable causal factors. Please see below the casual factor categories and potential selections.

7. CORRECTIVE ACTIONS, VERIFICATION AND VALIDATION, AND LESSONS LEARNED REPORT

The next step in the process is to develop and implement the corrective actions, verify, and validate that the corrective actions were successful, and disseminate the lessons learned report to TRC employees. Changes to processes must be placed into effect to prevent reoccurrence or similar events.

7.1 Development of Corrective Actions:

- Hazard mitigation methods generally fall into four categories:
  - Engineering or mechanical controls or job redesign: This is the preferred method since it eliminates or reduces the hazard and is a permanent solution. We will use this solution when possible.
  - Administrative Control: May include modifying a standard work practice and/or procedure or operational/systemic practice. An example is to limit the amount of time an employee is exposed to a repetitive operation or exposed to a noisy environment.

- Training: Once a safe job procedure has been established, employees can be trained in the proper (safe) method to do the job. While training is always desirable (and is required by law), a challenge with this solution is that it requires constant supervision to ensure employees continue to do the job in the way they were trained.
- Personal Protective Equipment (PPE): It is necessary to use hearing protection for noisy areas, proper gloves for material handling or exposure to chemicals or other material, steel-toe boots, and hard hats for protection against physical injury, and respirators to guard against exposure to air contaminants. This solution requires an evaluation of the proper PPE, additional training if necessary, and supervision and periodic inspection to ensure the equipment is used properly.

- The corrective actions will be developed by a team of individuals consisting of the employee(s) that were onsite, the Project Manager/Supervisor, the National Safety Director, and the Office Safety Coordinator. Other people may be involved depending on the severity of the incident or the complexity in developing corrective actions. Investigation findings will be tracked on the TRC Incident Investigation form.

7.2 Verification and Validation of Corrective Actions:

The corrective actions that are formulated and implemented must be verified and validated to ensure that employees are using the new safety controls and that the controls established are serving the purpose in eliminating the hazardous condition(s). Sometimes corrective actions may introduce additional safety hazards that may not be apparent until they are applied in the field. In addition, the verification and validation process allow for opportunities to photograph the corrective action while in process, which can be used in the Lessons Learned Report to follow. To identify that the safety controls are implemented and working, an observation must be planned.

7.3 Dissemination of Lessons Learned Report:

- The communication of the Lessons Learned Report is the final step. The report is designed to provide each employee with a quick summary of the incident, causal factor(s), and short- and/or long-term corrective actions. A sample of the Lessons Learned Report is provided **Appendix A**.
  - Sources of these lessons include incidents, First Aid cases, near misses, safe catches and observation findings from projects and offices throughout TRC.
- Where appropriate (typically only for very high-risk occasions or where similar reportable incidents are repeated) the SVP of Safety and Quality may send a formal notice to staff and Subcontractors requiring a change of work practice(s) and request an acknowledgement signature from employees and Subcontractors associated with the Project Team.

- It is the expectation that this program will provide employees and Subcontractors with a clear understanding of how to respond to safety incidents, conduct investigations, determine causal factors and corrective actions, and disseminate lessons learned to employees.

8. EMPOYEE MEDICAL AND EXOPSURE RECORDS

- Upon new hire orientation and annually thereafter, OSCs and Supervisors shall inform employees of their right to access employee medical and exposure records, the location of the records (TRC's Corporate Safety Folder), and the process for requesting these records. Employees can request these records from their local OSC, their direct Supervisor, or any member of TRC's Corporate Safety Department.
- Employee medical records associated with occupational health and safety will be securely stored electronically and retained by the Corporate Safety department for at least 30 years after the exposure or injury/illness occurs.
- If TRC ceases to do business, it shall transfer all records subject to this section to the successor employer. Whenever TRC either is ceasing to do business and there is no successor employer to receive and maintain the records, or intends to dispose of any records required to be preserved for at least thirty (30) years, TRC shall transfer the records to the Director of the National Institute for Occupational Safety and Health (NIOSH) if so required by a specific occupational safety and health standard.
- Employee medical and exposure records shall be provided to the requesting employee or their designated representative, within 15 business days, and no cost to the employee. Employee medical and exposure records will be treated confidentially. The contents which could directly or indirectly identify other employees (i.e., not associated with the requestor) will be redacted from the records provide to the requesting employee.

9. TRAINING

Incident investigators will be trained on their responsibilities and incident investigation techniques. Personnel must be trained in their roles and responsibilities for incident response and incident investigation techniques. Training requirements relative to incident investigation and reporting are described below:

- Training frequency will be based on the specific area of responsibility but shall not exceed once every two years.
- Training requirements relative to incident investigation and reporting shall include:
  - Awareness
  - First Responder Responsibilities
  - The Initial Investigation at the Accident Scene
  - Managing the Accident Investigation

- Collecting Data
- Analyzing Data
- Developing Conclusions and Judgments of Need
- Reporting the Results

10. REFERENCES/RELATED DOCUMENTS

29CFR1904.39

Employee Medical and Exposure Records

11. APPENDICIES

A. Incident Response Flowchart

B. Example Lessons Learned Report

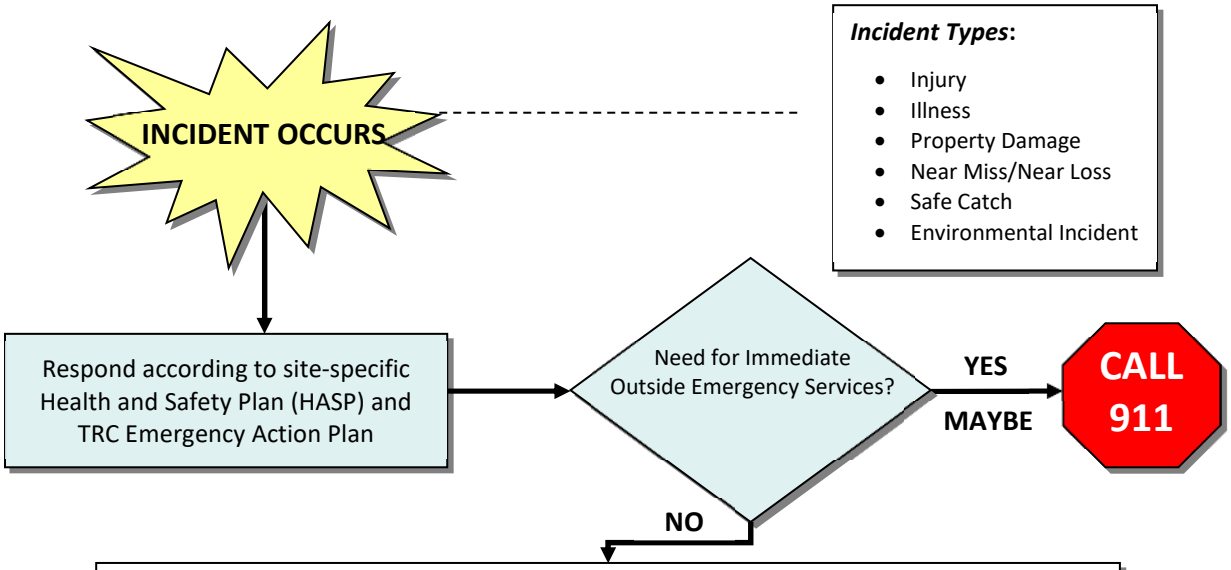
12. REVISION HISTORY

Revision Number	Revision Date	Summary of Revision	Modified by
0	4/3/14	New Document	Todd Woletz
4	1/8/20	Reformatting of document and minor revisions	Tim Johnson
5	3/5/21	Reviewed general formatting, and roles and responsibilities, reporting requirements, and employees record retention policy.	Tim Johnson
6	2/22/23	Addition of training requirements, client reporting requirements, and general formatting of document.	Tim Johnson
7	7/10/23	Updated to replace incident report forms with Safety Reporting System.	Tim Johnson

APPENDIX A

INCIDENT RESPONSE AND REPORTING FLOWCHART

INCIDENT RESPONSE



TRC Employee

- Determine immediate response actions
- Administer First Aid/CPR to level of competency
- Control/contain incident, if safe to do so
- Call Project Manager/Supervisor to report incident
- Call **WORKCARE** at **(888) 449-7787**
- Gather incident information (take notes, photos, witness info, drawings, etc.)

Project Manager/Supervisor

- Notify a member of the Corporate Health and Safety Team and your manager (in that order)
- Assist with developing immediate response actions, evaluate need for additional TRC support to scene for assistance, and deploy as needed
- Gather incident information from on-site employee
- Visit site to assess scene, as required

TRC Safety Director
Mike Glenn (949) 727-7347 or (949) 697-7418 - cell

APPENDIX B
EXAMPLE LESSONS LEARNED REPORT

TRC *Results you can rely on*

August 2016

LESSONS LEARNED REPORT

HEAT-RELATED ILLNESS!
HIGH TEMP + HIGH HUMIDITY = HEAT STRESS

INCIDENT SUMMARY



A TRC employee, began to feel the effects of heat stress as a result of the environmental conditions. As the summer temperature increased to 88 degrees Fahrenheit, the employee became saturated with sweat, nauseous, hands began to tremble, and fell short of breath. The employee notified the crew supervisor on-site of his condition. The employee was immediately given water to rehydrate and rest in an air-conditioned vehicle. WorkCare was called and based on the employee's symptoms, medical attention was recommended. The field supervisor located the nearest medical facility listed on the project-specific Health and Safety Plan and transported the employee to be evaluated. The employee was diagnosed with heat exhaustion and intravenous fluids were administered. Thankfully, the employee was cleared for discharge shortly thereafter and was able to return to regular work duty the following day.

CONTRIBUTING CAUSES/FACTORS

- **Extreme Heat**
  - Ambient air temperature exceeds **85 degrees** with relative humidity greater than **50 percent**. Temperature on this particular day was **88 degrees** with a relative humidity of **68 percent**.
- **Modified Work/Rest Schedule**
  - Additional rest breaks should have been introduced based on the extreme temperatures associated with the work day.
- **Acclimated to the Task**
  - The employee had not worked regularly in the field in recent months so was not acclimated to the environmental conditions.
- **Maintain Body Fluids**
  - A total of 1 to 1.5 gallons of water per individual per day are recommended for fluid replacement under heat stress conditions. The employee was not drinking enough fluids for the environmental conditions.



CORRECTIVE ACTIONS

- **Stopped Work –** Administered fluids and removed the employee from the environmental conditions.
- **WorkCare –** Notified the incident intervention service of the situation.
- **Medical Attention –** Evaluation and corrective measures.
- **Modified Work Schedule –** Work schedule has been adjusted to 30-minutes on/30-minutes off during extreme heat days.
- **Fluid Intake –** Project staff will consume 32 ounces of water per working hour to ensure proper hydration. A water supply will be readily available on-site, in coolers with ice, no more than 100 meters from staff at all times.
- **WBGT Thermometer –** A Wet-Bulb Globe Temperature (WBGT) thermometer will stay on-site at all times to accurately measure the ambient air temperature and relative humidity.
- **Staff Messaging –** Safety Reminder circulated to staff. TRC's Heat Stress Prevention Program reviewed with project team.

LESSONS LEARNED

- **Monitor Physical Conditions –** Field staff should have had increased awareness of their physical condition and their fellow co-worker's condition for signs or symptoms of heat illnesses. **The Buddy System**—staff should be asking each other: How are you feeling? Nauseous? Shaky? Need a break? How much fluid have you had this hour?
- **Environmental Conditions Responsiveness –** Field staff should have avoided heavy exertion, extreme heat, sun exposure, and high humidity when possible. Work schedule should have been adjusted to accommodate more frequent rest periods and an altered work start time to conduct field tasks during the cooler portions of the day.
- **Safety Communication –** Incident review interviews determined that heat-stress was a topic of discussion at the Daily Pre-Task Safety Briefing. Continued heat discussions will take part of all Safety Briefings to highlight the importance of environmental conditions awareness and management.

Contact: If you have any questions about this report or would like additional information please contact Curt Biondich, PPL Safety Coordinator at cbiondich@trcsolutions.com or Mike Glenn, TRC Safety Director at mglenn@trcsolutions.com.

INCIDENT NOTIFICATION REPORT

(To be completed immediately after an Injury, Illness, Incident or Significant Near Miss by Employee's Supervisor and Employee involved)

Incident Category

☐ Injury/Illness ☐ Near Miss/Loss ☐ Property Damage ☐ Other

1 Incident Location: _____

2 Project #: _____

3 Client: _____

4 Date Incident Occurred: _____ Time: _____

5 Date Incident Reported: _____ Time: _____

TRC Employee Information

6 Name: _____ Phone: _____

7 Office: _____ Address: _____

8 Supervisor Name: _____ Phone: _____

9 Title or Occupation: _____

10 Sector/Practice:

Incident Description

11 Task Performed/Description of Incident:

12 Conditions at the Time of Incident (weather, lighting, etc.):

13 Description of Property Damage:

Employee Injury or Illness Description

14 Describe the Injury or Illness:

15 First Aid/Medical Treatment Administered:

16 Was WorkCare Contacted? ☐ Yes ☐ No

17 Name of Doctor's Office, Clinic or Hospital: _____

18 Address: Phone:

INCIDENT NOTIFICATION REPORT

(To be completed immediately after an Injury, Illness, Incident or Significant Near Miss by Employee's Supervisor and Employee involved)

Subcontractor Involvement

19 Was a subcontractor involved? ☐ Yes ☐ No

20 Name of Company: _____

21 Address: _____

22 Contact Name: _____ Phone: _____

23 Description of the Incident:

Witness Information

24 Were there witnesses to the incident? ☐ Yes ☐ No

25 Name(s) Address(es) Number(s)

_____

_____

Immediate Corrective Actions

26 Describe the Immediate Corrective Actions Taken:

Client Notification

27 Is there a client incident notification requirement? ☐ Yes ☐ No

28 Contact Name _____

29 Date of Notification: _____ Time: _____

30 Notification Method:

Supervisor: _____ Signature: _____ Date: _____

Employee: Signature: Date:

AUTO INCIDENT REPORT

EMPLOYEE INFORMATION (V-1):

Name: _____ Phone: ( ) _____

Sector/Practice: _____ Office Location: _____

Supervisor's Name: _____ Supervisor's Phone: ( ) _____

Project #: _____ Client's Name: _____

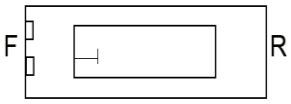
Driver's License #: _____ State: _____

VEHICLE INFORMATION (V-1):

Year/Make/Model of Vehicle: _____

License Plate #: _____ Vehicle ID # (VIN): _____

Circle Point of Contact:



Was Vehicle Drivable? ☐ Yes ☐ No

Vehicle Type (Use Drop List):

Rental Company (Use Drop List):

Fleet Type (Use Drop List):

INCIDENT INFORMATION:

Date of Incident: _____ Time of Incident: _____ A.M. _____ P.M. Photos Taken: ☐ Yes ☐ No

Location of Incident: _____ City/State: _____

Were The Authorities Contacted? Police: ☐ Yes ☐ No Ambulance: ☐ Yes ☐ No Fire: ☐ Yes ☐ No

Name of Police Dept: _____ Case #: _____ Officer Name: _____

Were Citations Issued? ☐ Yes ☐ No If Yes, To Whom? _____

Citation Number: _____

Were There Any Witnesses? ☐ Yes ☐ No If Yes, Please Provide Name, Address and Phone Below:

Witness Name: _____ Witness Phone: ( ) _____

Witness Address: _____

Traffic Conditions (i.e., heavy, light): _____ Weather Conditions (i.e., dry, wet, ice, fog): _____

WorkCare Contacted? ☐ Yes ☐ No

TRC Driver Injured? ☐ Yes ☐ No Medical Treatment Received? ☐ Yes ☐ No

Front Seat Passenger Injured? ☐ Yes ☐ No Medical Treatment Received? ☐ Yes ☐ No

Rear Driver Side Passenger Injured? ☐ Yes ☐ No Medical Treatment Received? ☐ Yes ☐ No

Rear Passenger Side Passenger Injured? ☐ Yes ☐ No Medical Treatment Received? ☐ Yes ☐ No

Describe Injuries:

Describe Damage to Property Other Than Motor Vehicles (i.e., guardrails, mailboxes, etc.):

AUTO INCIDENT REPORT

OTHER DRIVER & VEHICLE INFORMATION (V-2):

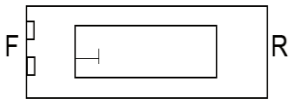
Driver's Name: _____ Driver's Phone: ( ) _____

Driver's Address: _____

Owner's Name (If different than driver): _____ Owner's Phone: ( ) _____

Owner's Address: _____

Year/Make/Model of Vehicle: _____ License Plate #: _____ State: _____

Circle Point of Contact: 

Was Vehicle Drivable? ☐ Yes ☐ No

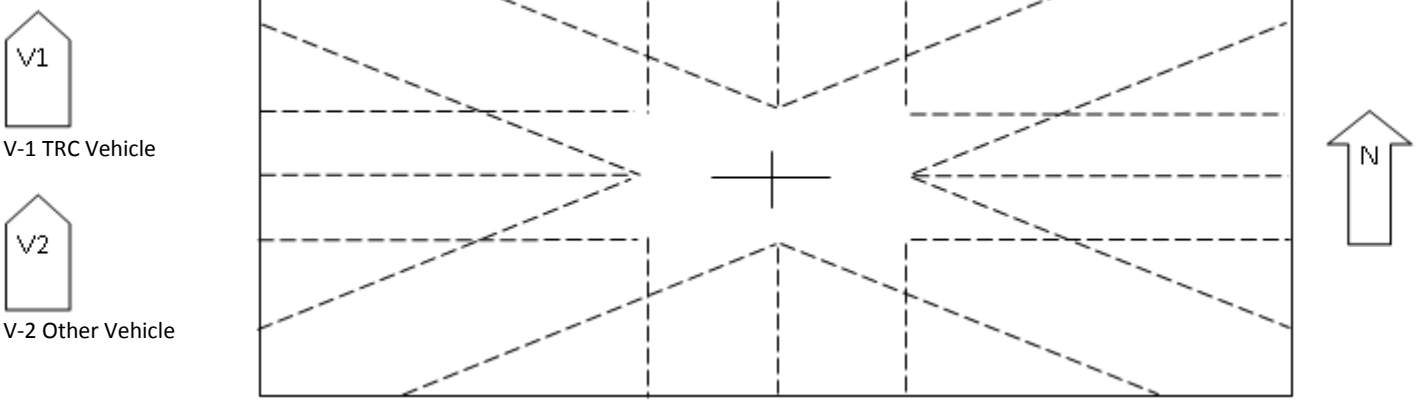
Insurance Company Name: _____ Policy Number: _____

Insurance Company Phone: ( ) _____ Number of Passengers in Vehicle: _____

List Persons Injured: _____

Were Any Other Vehicles Involved in Incident? ☐ Yes ☐ No If yes, provide details below:

PLEASE DESCRIBE THE INCIDENT AND COMPLETE THE DIAGRAM BELOW. Be sure to indicate as many details as possible (i.e., How many lanes in each direction; Were there any turn lanes; What kind of traffic controls were there – light, stop sign, yield sign, Positions of vehicles on impact).



Completed By: _____ Signature: _____

A-7 "Safe Catch" Report

A "Safe Catch" is a potential hazard or incident that has not resulted in any personal injury. Unsafe working conditions, unsafe employee behaviors, improper use of equipment or use of malfunctioning equipment have the potential to cause work related injuries. It is everyone's responsibility to report and/or correct these potential incidents immediately. Please complete this form as a means to report these "Good Catch" situations and submit to your local OSC Representative and Mike Glenn, National Safety Director.

Complete ALL field entries:

Employee Name:		Date:	
Location:		Office:	
Project Number:		Practice:	

Conditions

Please check all appropriate conditions:

☐ Unsafe Act	☐ Unsafe Condition	☐ Unsafe Equipment	☐ Unsafe Use of Equipment

Description of Incident or Potential Hazard:

Task Performed at Time of Incident:

Causes (Primary and Contributing):

Corrective Action(s) Taken (remove the hazard, replace, repair, or retrain):

Employee Signature:		Date Completed:	

Our Mission: To reduce the frequency of incidents by applying local lessons learned globally.

If you have any questions about this report or would like additional information, please reference Compliance Program CP019—TRC Incident Response and Lessons Learned Program, located on TRCNET or contact Mike Glenn, National Safety Director at mglenn@trcsolutions.com.

EARLY INCIDENT INTERVENTION®

Immediate Access to Medical Advice for Work Related Incidents

(888) 449-7787

INTRODUCTION

WorkCare, Inc. (WorkCare) and TRC have partnered together to promote Incident Intervention®, a resource designed to support company safety goals/targets—while reducing runaway-costs associated with workplace injuries and illnesses.

PURPOSE

Early Incident Intervention provides TRC employees with **IMMEDIATE** telephonic access to WorkCare clinicians at the time of a presumed, non-emergency workplace injury or illness. Clinicians provide expert guidance on the evaluation of symptoms, appropriate first aid, and the need for additional medical evaluation or treatment.

When utilizing this service within the first hour of an incident, known as the "Golden Hour," licensed medical staff can guide the case so that medical evaluation and treatment are rendered appropriately.

> ***"…helps the worker traverse the unpredictable terrain of work-related injuries and illness."***

PRINCIPLES OF EARLY INCIDENT INTERVENTION

- Utilizes principles of the "Golden Hour."
- Provides workers immediate clinician support at the time of an incident.
- Focuses on providing the right care, at the right time in the proper setting.

BENEFITS FOR EMPLOYEES

- Instant access to a medically qualified professional for evaluation of symptoms and possible outcomes.
- Professional guidance on appropriate first aid measures and medications.
- Professional advice regarding the need for additional medical evaluation or treatment.

BENEFITS FOR TRC

- Point of contact for emergency and non-emergency medical clinicians.
- Triages the incident to determine risk and urgency, delivering interventions that are consistent with medical guidelines for the specified injury and illness.
- Maintains communication with clinicians to ensure accurate and timely reporting.

Appendix C

NYSDOH
Generic Community Air Monitoring Plan

Appendix C
New York State Department of Health
Generic Community Air Monitoring Plan

Overview

A Community Air Monitoring Plan (CAMP) requires real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the downwind perimeter of each designated work area when certain activities are in progress at contaminated sites. The CAMP is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (i.e., off-site receptors including residences and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative and remedial work activities. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP helps to confirm that work activities did not spread contamination off-site through the air.

The generic CAMP presented below will be sufficient to cover many, if not most, sites. Specific requirements should be reviewed for each situation in consultation with NYSDOH to ensure proper applicability. In some cases, a separate site-specific CAMP or supplement may be required. Depending upon the nature of contamination, chemical- specific monitoring with appropriately-sensitive methods may be required. Depending upon the proximity of potentially exposed individuals, more stringent monitoring or response levels than those presented below may be required. Special requirements will be necessary for work within 20 feet of potentially exposed individuals or structures and for indoor work with co-located residences or facilities. These requirements should be determined in consultation with NYSDOH.

Reliance on the CAMP should not preclude simple, common-sense measures to keep VOCs, dust, and odors at a minimum around the work areas.

Community Air Monitoring Plan

Depending upon the nature of known or potential contaminants at each site, real-time air monitoring for VOCs and/or particulate levels at the perimeter of the exclusion zone or work area will be necessary. Most sites will involve VOC and particulate monitoring; sites known to be contaminated with heavy metals alone may only require particulate monitoring. If radiological contamination is a concern, additional monitoring requirements may be necessary per consultation with appropriate DEC/NYSDOH staff.

Continuous monitoring will be required for all ground intrusive activities and during the demolition of contaminated or potentially contaminated structures. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells.

Periodic monitoring for VOCs will be required during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. “Periodic” monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or

overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

VOC Monitoring, Response Levels, and Actions

Volatile organic compounds (VOCs) must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis or as otherwise specified. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions, particularly if wind direction changes. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

1. If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

2. If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

3. If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.

4. All 15-minute readings must be recorded and be available for State (DEC and NYSDOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

Particulate Monitoring, Response Levels, and Actions

Particulate concentrations should be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring should be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment must be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

1. If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m^3 above the upwind level and provided that no visible dust is migrating from the work area.

2. If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/m^3 above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/m^3 of the upwind level and in preventing visible dust migration.

3. All readings must be recorded and be available for State (DEC and NYSDOH) and County Health personnel to review.

December 2009

Appendix C1
Fugitive Dust and Particulate Monitoring

A program for suppressing fugitive dust and particulate matter monitoring at hazardous waste sites is a responsibility on the remedial party performing the work. These procedures must be incorporated into appropriate intrusive work plans. The following fugitive dust suppression and particulate monitoring program should be employed at sites during construction and other intrusive activities which warrant its use:

1. Reasonable fugitive dust suppression techniques must be employed during all site activities which may generate fugitive dust.

2. Particulate monitoring must be employed during the handling of waste or contaminated soil or when activities on site may generate fugitive dust from exposed waste or contaminated soil. Remedial activities may also include the excavation, grading, or placement of clean fill. These control measures should not be considered necessary for these activities.

3. Particulate monitoring must be performed using real-time particulate monitors and shall monitor particulate matter less than ten microns (PM10) with the following minimum performance standards:

(a) Objects to be measured: Dust, mists or aerosols;
(b) Measurement Ranges: 0.001 to 400 mg/m3 (1 to 400,000 :ug/m3);
(c) Precision (2-sigma) at constant temperature: +/- 10 :g/m3 for one second averaging; and +/- 1.5 g/m3 for sixty second averaging;
(d) Accuracy: +/- 5% of reading +/- precision (Referred to gravimetric calibration with SAE fine test dust (mmd= 2 to 3 :m, g= 2.5, as aerosolized);
(e) Resolution: 0.1% of reading or 1g/m3, whichever is larger;
(f) Particle Size Range of Maximum Response: 0.1-10;
(g) Total Number of Data Points in Memory: 10,000;
(h) Logged Data: Each data point with average concentration, time/date and data point number
(i) Run Summary: overall average, maximum concentrations, time/date of maximum, total number of logged points, start time/date, total elapsed time (run duration), STEL concentration and time/date occurrence, averaging (logging) period, calibration factor, and tag number;
(j) Alarm Averaging Time (user selectable): real-time (1-60 seconds) or STEL (15 minutes), alarms required;
(k) Operating Time: 48 hours (fully charged NiCd battery); continuously with charger;
(l) Operating Temperature: -10 to 50° C (14 to 122° F);
(m) Particulate levels will be monitored upwind and immediately downwind at the working site and integrated over a period not to exceed 15 minutes.

4. In order to ensure the validity of the fugitive dust measurements performed, there must be appropriate Quality Assurance/Quality Control (QA/QC). It is the responsibility of the remedial party to

5. The action level will be established at 150 ug/m3 (15 minutes average). While conservative,

adequately supplement QA/QC Plans to include the following critical features: periodic instrument calibration, operator training, daily instrument performance (span) checks, and a record keeping plan.

this short-term interval will provide a real-time assessment of on-site air quality to assure both health and safety. If particulate levels are detected in excess of 150 ug/m3, the upwind background level must be confirmed immediately. If the working site particulate measurement is greater than 100 ug/m3 above the background level, additional dust suppression techniques must be implemented to reduce the generation of fugitive dust and corrective action taken to protect site personnel and reduce the potential for contaminant migration. Corrective measures may include increasing the level of personal protection for on-site personnel and implementing additional dust suppression techniques (see paragraph 7). Should the action level of 150 ug/m3 continue to be exceeded work must stop and DER must be notified as provided in the site design or remedial work plan. The notification shall include a description of the control measures implemented to prevent further exceedances.

6. It must be recognized that the generation of dust from waste or contaminated soil that migrates off-site, has the potential for transporting contaminants off-site. There may be situations when dust is being generated and leaving the site and the monitoring equipment does not measure PM10 at or above the action level. Since this situation has the potential to allow for the migration of contaminants off-site, it is unacceptable. While it is not practical to quantify total suspended particulates on a real-time basis, it is appropriate to rely on visual observation. If dust is observed leaving the working site, additional dust suppression techniques must be employed. Activities that have a high dusting potential--such as solidification and treatment involving materials like kiln dust and lime--will require the need for special measures to be considered.

7. The following techniques have been shown to be effective for the controlling of the generation and migration of dust during construction activities:

(a) Applying water on haul roads;
(b) Wetting equipment and excavation faces;
(c) Spraying water on buckets during excavation and dumping;
(d) Hauling materials in properly tarped or watertight containers;
(e) Restricting vehicle speeds to 10 mph;
(f) Covering excavated areas and material after excavation activity ceases; and
(g) Reducing the excavation size and/or number of excavations.

Experience has shown that the chance of exceeding the 150ug/m3 action level is remote when the above-mentioned techniques are used. When techniques involving water application are used, care must be taken not to use excess water, which can result in unacceptably wet conditions. Using atomizing sprays will prevent overly wet conditions, conserve water, and provide an effective means of suppressing the fugitive dust.

8. The evaluation of weather conditions is necessary for proper fugitive dust control. When extreme wind conditions make dust control ineffective, as a last resort remedial actions may need to be suspended. There may be situations that require fugitive dust suppression and particulate monitoring requirements with action levels more stringent than those provided above. Under some circumstances, the contaminant concentration and/or toxicity may require additional monitoring to protect site personnel and the public. Additional integrated sampling and chemical analysis of the dust may also be in order. This must be evaluated when a health and safety plan is developed and when appropriate

suppression and monitoring requirements are established for protection of health and the environment.

Appendix D

Hot Work Permit Form

HOT WORK PERMIT

PART 1 - INFORMATION

Issue Date:	Prepared By:
Date Work to be Performed: Start:	Finish (permit terminated):
Performed By:	
Work Area:	
Object to be Worked On:	

PART 2 - APPROVAL

(for 1, 2 or 3: mark Yes, No or NA)*

Will working be on or in:	Finish (permit terminated):	
1. Metal partition, wall, ceiling covered by combustible material?	yes	no
2. Pipes, in contact with combustible material?	yes	no
3. Explosive area?	yes	no

* = If any of these conditions exist (marked "yes"), a permit will not be issued without being reviewed and approved by Bryan C. Hann, P.G. (Corporate Health and Safety Director). Required Signature below.

PART 3 - REQUIRED CONDITIONS**

(Check all conditions that must be met)

	PROTECTIVE ACTION		PROTECTIVE EQUIPMENT
	Specific Risk Assessment Required		Goggles/visor/welding screen
	Fire or spark barrier		Apron/fireproof clothing
	Cover hot surfaces		Welding gloves/gauntlets/other:
	Move movable fire hazards, specifically		Wellintons/Knee pads
	Erect screen on barrier		Ear protection: Ear muffs/Ear plugs
	Restrict Access		B.A.: SCBA/Long Breather
	Wet the ground		Respirator: Type:
	Ensure adequate ventilation		Cartridge:
	Provide adequate supports		Local Exhaust Ventilation
	Cover exposed drain/floor or wall cracks		Extinguisher/Fire blanket
	Fire watch (must remain on duty during duration of permit)		Personal flammable gas monitor
	Issue additional permit(s):		

Other precautions:

** Permit will not be issued until these conditions are met.

SIGNATURES

Orginating Employee:	Date:
Project Manager:	Date:
Part 2 Approval:	Date:

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December 17, 2024

Mithila Poojari-Arndt
Architectural Resources
505 Franklin Street
Buffalo, NY 14203

Re: Contaminated Soil Screening Sampling and Geotechnical Report
Hamburg Department of Transportation – Storage Building
75 Evans Street
Hamburg, NY 14075
OGS Project No 47510
Client Project no. 286.20.30
EG #24552

Dear Mithila Poojari-Arndt:

Enclosed please find a copy of the Soil Screening Sampling and Geotechnical Report for the Hamburg DOT Storage Building project located at the address listed above. Should you have any questions please do not hesitate to contact our office at 716.592.3980. Thank you for the opportunity to be of service to Architectural Resources.

Sincerely,



Sean Fitzgerald
Director of Regulated Building Materials

Enclosures

Contaminated Soil Sampling Screening and Geotechnical Engineering Report

OF THE:

Hamburg DOT Storage Building
75 Evans Street
Hamburg, NY 14075
EG#24552

PREPARED BY:

ENCORUS® GROUP

PREPARED FOR:

Architectural Resources
505 Franklin Street
Buffalo, NY 14203

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Summary Tabulation

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2.2 Executive Summary
2.3 Summary of Volatile Organic Contamination
2.4 Summary of Semivolatile Organic Contamination
2.5 Summary of PCB Contamination
2.6 Summary of Pesticide Contamination
2.7 Summary of Metals Contamination
2.8 Summary of Inorganics and Miscellaneous Items
2.9 Conclusions

Appendices

A General Conditions of Inspection
B Chains of Custody and Laboratory Reports
C Soil Sample Map
D Geotechnical Engineering Report (provided by Glynn Group)

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1. Introduction

Encorus Group Engineering (Encorus Group) was retained by Architectural Resources to perform an soil screening for the property located at 75 Evans Street in Hamburg, NY to determine the presence of contaminates per NYS DEC regulations for soil reuse and disposal prior to work associated with the Storage Building project.

The scope of work provided is as indicated in the proposal for Soil Screening Services dated August 2, 2024 and includes the following:

- Provided soil contamination screening per NYSDEC Part 360 & 375 regulations for soil reuse and disposal.
- Geotechnical Investigation (performed by others)

This report is generated for the exclusive use of the client and is not designed to serve as a specification for construction. The owner is strongly encouraged to contract with a consultant for the preparation of contract specifications, work plans, and/or drawings prior to requesting bids for the abatement or removal of the materials identified in this report.

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2. Soil Contamination Screening

2.1 Methodology

Soil boring samples were collected from the geotechnical boring contractor at specified locations. This report is to provide screening for potential contamination that may be encountered on the anticipated project site. The soil samples were submitted and analyzed by an EPA approve laboratory and analyzed for all contaminates as identified in the New York State Department of Environmental Conservation Part 360 & Part 375, which reference the use, reuse, and disposal of excavated soil.

2.2 Executive Summary

The soil screening includes the sampling, analysis, and summary of found contaminates that may be disturbed by the project. Copies of all laboratory analysis reports and chains of custody listing locations of sample collection are located in Appendix C.

2.3 Summary of Volatile Organic Contamination

Volatile Organic Parameter	Regulatory Limit (ppm)	Analysis Results (ppm)					
		Soil Sample #1 (Boring-1)	Soil Sample #2 (Boring-1)	Soil Sample #3 (Boring-2)	Soil Sample #4 (Boring-2)	Soil Sample #5 (Boring-3)	Soil Sample #6 (Boring-3)
Methylene Chloride	0.05	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	0.02	ND	ND	ND	ND	ND	ND
Chloroform	0.37	ND	ND	ND	ND	ND	ND
Carbon tetarchloride	0.76	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1.3	ND	ND	ND	ND	ND	ND
Chlorobenzene	1.1	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	1.1	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	0.68	ND	ND	ND	ND	ND	ND
Benzene	0.06	ND	ND	ND	ND	ND	ND
Toluene	0.7	ND	ND	ND	ND	ND	ND
Ethylbenzene	1	ND	ND	ND	ND	ND	ND
Vinyl Chloride	0.02	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	0.24	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	0.19	ND	ND	**0.86**	ND	ND	ND
Trichloroethene	0.47	ND	ND	**2.2**	ND	**0.64**	ND
1,2-Dichlorobenzene	1.1	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	0.02	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	1.8	ND	ND	ND	ND	ND	ND
Methyl ter butyl ether	0.1	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	0.26	ND	ND	ND	ND	ND	ND
Acetone	0.26	ND	ND	ND	ND	ND	ND
1-Butanone	0.19	ND	ND	**1.1**	ND	ND	ND
n-Butylbenzene	0.03	ND	ND	ND	**6.5**	ND	ND
sec-Butylbenzene	NA	ND	ND	ND	ND	ND	ND
tert-Butylbenzene	18	ND	ND	ND	ND	ND	ND
n-Propylbenzene	25	ND	ND	ND	ND	ND	ND

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2.4 Summary of Semivolatile Organic Contamination

Semivolatile Organic Parameter	Regulatory Limit (ppm)	Analysis Results (ppm)					
		Soil Sample #1 (Boring-1)	Soil Sample #2 (Boring-1)	Soil Sample #3 (Boring-2)	Soil Sample #4 (Boring-2)	Soil Sample #5 (Boring-3)	Soil Sample #6 (Boring-3)
Acenaphthene	1	ND	ND	ND	ND	ND	ND
Hexachlorobenzene	1	ND	ND	ND	ND	ND	ND
Fluoranthene	1	ND	ND	ND	ND	ND	ND
Naphthalene	0.08	ND	ND	ND	ND	ND	ND
Nitrobenzene	1	ND	ND	ND	ND	ND	**49**
Benzo(a)anthracene	100	ND	ND	ND	ND	ND	ND
Benzo(a)pyrene	100	ND	ND	ND	ND	ND	ND
Benzo(b)fluoranthene	0.64	ND	ND	ND	ND	ND	ND
Benzo(k)fluoranthene	30	ND	ND	ND	ND	ND	ND
Chyrsene	1.1	ND	ND	ND	ND	ND	**76**
Acenaphthylene	0.33	ND	ND	ND	ND	ND	ND
Antracene	0.5	ND	ND	ND	ND	ND	ND
Benzo(ghi)perlene	64	ND	ND	ND	ND	ND	23
Fluorene	0.038	ND	ND	ND	ND	ND	ND
Phenanthrene	2.1	ND	ND	ND	ND	ND	ND
Dibenzo(a,h)anthracene	0.08	ND	ND	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	0.33	ND	ND	ND	ND	ND	ND
Pyrene	0.1	ND	ND	ND	ND	ND	ND
Aniline	0.33	ND	ND	ND	ND	ND	ND
Dibenzofuran	0.1	ND	ND	ND	ND	ND	ND
Pentachlorophenol	1	ND	ND	ND	ND	ND	ND
Phenol	1	ND	ND	ND	ND	ND	ND
2-Methylphenol	1	ND	ND	ND	ND	ND	ND
3-Methylphenol/4-Methylphenol	0.08	ND	ND	ND	ND	ND	ND
1,4-Dioxane	1	ND	ND	ND	ND	ND	**49**

2.5 Summary of PCBs Contamination

PCB Parameter	Regulatory Limit (ppm)	Analysis Results (ppm)					
		Soil Sample #1 (Boring-1)	Soil Sample #2 (Boring-1)	Soil Sample #3 (Boring-2)	Soil Sample #4 (Boring-2)	Soil Sample #5 (Boring-3)	Soil Sample #6 (Boring-3)
Aroclor 1016	-	ND	ND	ND	ND	ND	ND
Aroclor 1221	-	ND	ND	ND	ND	ND	ND
Aroclor 1232	-	ND	ND	ND	ND	ND	ND
Aroclor 1242	-	ND	ND	ND	ND	ND	ND
Aroclor 1248	-	ND	ND	ND	ND	ND	ND
Aroclor 1254	-	ND	ND	ND	ND	ND	ND
Aroclor 1260	-	ND	ND	ND	ND	ND	ND
Aroclor 1262	-	ND	ND	ND	ND	ND	ND
Aroclor 1268	-	ND	ND	ND	ND	ND	ND
PCBs, Total	1	ND	ND	ND	ND	ND	ND

2.6 Summary of Pesticide Contamination

Pesticide Parameter	Regulatory Limit (ppm)	Analysis Results (ppm)					
		Soil Sample #1 (Boring-1)	Soil Sample #2 (Boring-1)	Soil Sample #3 (Boring-2)	Soil Sample #4 (Boring-2)	Soil Sample #5 (Boring-3)	Soil Sample #6 (Boring-3)
Delta-BHC	0.024	ND	ND	ND	ND	ND	ND
Lindane	0.026	ND	ND	ND	ND	ND	ND
Alpha-BHC	0.02	ND	ND	ND	ND	ND	ND
Beta-BHC	0.021	ND	ND	ND	ND	ND	ND
Heptachlor	0.013	ND	ND	ND	ND	ND	ND
Aldrin	0.0048	ND	ND	ND	ND	ND	ND
Endrin	0.014	ND	ND	ND	ND	ND	ND
Dieldrin	0.005	ND	ND	ND	ND	ND	ND
4,4'-DDE	0.0033	ND	ND	ND	ND	ND	ND
4,4'-DDD	0.0033	ND	ND	ND	ND	ND	ND
4,4'-DDT	0.0033	ND	ND	ND	ND	ND	ND
Endosulfan I	4.3	ND	ND	ND	ND	ND	ND
Endosulfan II	4.3	ND	ND	ND	ND	ND	ND
Endosulfan sulfate	4.3	ND	ND	ND	ND	ND	ND
cis-Chlordane	0.014	ND	ND	ND	ND	ND	ND
Chlordane	0.014	ND	ND	ND	ND	ND	ND
2,4,5-TP (Silvex)	3.8	ND	ND	ND	ND	ND	ND

2.7 Summary of Metals Contamination

Metals Parameter	Regulatory Limit (ppm)	Analysis Results (ppm)					
		Soil Sample #1 (Boring-1)	Soil Sample #2 (Boring-1)	Soil Sample #3 (Boring-2)	Soil Sample #4 (Boring-2)	Soil Sample #5 (Boring-3)	Soil Sample #6 (Boring-3)
Arsenic	13	**13.30**	3.95	5.32	5.58	8.09	10.40
Barium	410	142.00	26.30	**16.70**	18.80	38.90	41.50
Beryllium	4.4	0.53	0.23	0.57	0.19	0.45	0.25
Cadmium	2.5	0.15	ND	ND	ND	ND	0.51
Chromium	1	**11.20**	**6.93**	**24.40**	**6.14**	**18.60**	**9.02**
Copper	50	**52.40**	21.30	23.80	14.70	26.70	25.30
Lead	63	38.20	9.21	7.15	6.46	15.90	11.40
Manganese	1600	182.00	144.00	349.00	143.00	229.00	212.00
Mercury	0.18	0.08	ND	ND	ND	ND	ND
Nickel	30	13.80	13.60	**41.60**	12.00	27.50	25.30
Selednium	4	1.19	1.92	**69.20**	ND	ND	0.28
Silver	2	ND	ND	ND	ND	ND	ND
Zinc	109	57.40	47.50	69.20	40.80	78.40	99.30
Chromium, Trivalent	30	0.93	6.93	24.40	6.14	18.60	9.02

2.8 Summary of Inorganics & Miscellaneous Contamination

Parameter	Regulatory Limit (ppm)	Analysis Results (ppm)					
		Soil Sample #1 (Boring-1)	Soil Sample #2 (Boring-1)	Soil Sample #3 (Boring-2)	Soil Sample #4 (Boring-2)	Soil Sample #5 (Boring-3)	Soil Sample #6 (Boring-3)
Solids	-	86%	76%	86%	82%	92%	91%
Cyanide	2.3	ND	ND	ND	ND	**3.3**	1.1
Chromium, Hexavalent	1	ND	ND	ND	ND	ND	0.875

2.9 Conclusions

Based on the laboratory readings, contamination present on the project site for volatiles, metals, and inorganic cyanide exceed NYSDEC parameters. The project site soils would be classified as restricted use per NYSDEC Part 375 guidelines. Any soil excavated during construction should be classified as restricted use unless further testing prior to disposal deems the soil under the regulatory limits.

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Appendix A General Conditions

1. Encorus Group Engineering, P.C. neither accepts nor implies any liability for the implementation of the recommendations found within this report.

2. This inspection was limited to areas accessible to the inspector. Encorus Group Engineering, P.C. neither accepts nor implies any liability for hazardous materials that may be present in other areas of the building.

3. The results of the laboratory analytical reports that may be contained herein are the product of the knowledge, experience and expertise of the laboratory retained to perform such services. Encorus Group Engineering neither accepts nor implies any liability for sample analysis reports compiled by others.

4. This report is based on the condition and contents present at the site on the day of the inspection. Encorus Group Engineering, P.C. is not liable for materials, chemicals or other substances of concern that may have been removed from the site, cleaned or disposed of prior to the inspection date or subsequent to that date.

5. An inspection for soil contamination relies heavily upon identification of homogeneous areas, with subsequent sampling and laboratory analysis determined by: the quantity of surfaces identified, generally accepted inspection protocols, regulatory requirements, and the inspector's judgment. Specific sample locations are determined with the objective of selecting representative samples. As with any type of sampling, the possibility of obtaining a false positive or false negative does exist, is inherent in the sampling process, and can at times result from the uneven distribution of target analytes within the suspect material. The comprehensive inspection protocol developed and utilized by Encorus Group Engineering, P.C. attempts to minimize the risk of a false positive or false negative result. However, the client is advised that the risk of false positives or false negatives cannot be completely eliminated.

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Appendix B Chains of Custody and Laboratory Reports

JOB: L2468369 REPORT STYLE: Data Usability Report
0010: Alpha Analytical Report Cover Page - OK
0015: Sample Cross Reference Summary - OK
0060: Case Narrative - OK
0100: Volatiles Cover Page - OK
0110: Volatiles Sample Results - OK
0120: Volatiles Method Blank Report - OK
0130: Volatiles LCS Report - OK
0180: Semivolatiles Cover Page - OK
0190: Semivolatiles Sample Results - OK
0200: Semivolatiles Method Blank Report - OK
0210: Semivolatiles LCS Report - OK
0700: PCBs Cover Page - OK
0710: PCBs Sample Results - OK
0720: PCBs Method Blank Report - OK
0730: PCBs LCS Report - OK
0900: Pesticides Cover Page - OK
0910: Pesticides Sample Results - OK
0920: Pesticides Method Blank Report - OK
0930: Pesticides LCS Report - OK
1005: Metals Sample Results - OK
1010: Metals Method Blank Report - OK
1020: Metals LCS Report - OK
1040: Metals Matrix Spike Report - OK
1050: Metals Duplicate Report - OK
1180: Inorganics Cover Page - OK
1200: Wet Chemistry Sample Results - OK
1210: Wet Chemistry Method Blank Report - OK
1220: Wet Chemistry LCS Report - OK
1240: Wet Chemistry Matrix Spike Report - OK
1250: Wet Chemistry Duplicate Report - OK
5100: Sample Receipt & Container Information Report - OK
5200: Glossary - OK
5400: References - OK

No results found for sample L2468369-01 for product A2-NY-1633
No results found for sample L2468369-02 for product A2-NY-1633
No results found for sample L2468369-03 for product A2-NY-1633
No results found for sample L2468369-04 for product A2-NY-1633
No results found for sample L2468369-05 for product A2-NY-1633
No results found for sample L2468369-06 for product A2-NY-1633

ANALYTICAL REPORT

Lab Number:	L2468369
Client:	Encorus Group 23 Mechanic Street Springville, NY 14141
ATTN:	Sean Fitzgerald
Phone:	(716) 592-3980
Project Name:	SOIL TESTING: 75 EVANS STREET
Project Number:	24552
Report Date:	12/03/24

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0826), IL (200077), IN (C-MA-03), KY (KY98045), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930A1).

Project Name: SOIL TESTING: 75 EVANS STREET
Project Number: 24552

Lab Number: L2468369
Report Date: 12/03/24

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2468369-01	20241120-BORE1-SAMPLE 1	SOIL	75 EVANS ST., HAMBURG, NY	11/20/24 14:00	11/20/24
L2468369-02	20241120-BORE1-SAMPLE 2	SOIL	75 EVANS ST., HAMBURG, NY	11/20/24 14:00	11/20/24
L2468369-03	20241120-BORE2-SAMPLE 3	SOIL	75 EVANS ST., HAMBURG, NY	11/20/24 14:00	11/20/24
L2468369-04	20241120-BORE2-SAMPLE 4	SOIL	75 EVANS ST., HAMBURG, NY	11/20/24 14:00	11/20/24
L2468369-05	20241120-BORE3-SAMPLE 5	SOIL	75 EVANS ST., HAMBURG, NY	11/20/24 14:00	11/20/24
L2468369-06	20241120-BORE3-SAMPLE 6	SOIL	75 EVANS ST., HAMBURG, NY	11/20/24 14:00	11/20/24

Project Name:	SOIL TESTING: 75 EVANS STREET	**Lab Number:**	L2468369
Project Number:	24552	**Report Date:**	12/03/24

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet weight basis, unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	SOIL TESTING: 75 EVANS STREET	**Lab Number:**	L2468369
Project Number:	24552	**Report Date:**	12/03/24

Case Narrative (continued)

Report Submission

December 03, 2024: This is a preliminary report.

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Volatile Organics

Any reported concentrations that are below 200 ug/kg may be biased low due to the sample not being collected according to 5035-L/5035A-L low-level specifications.

Total Metals

L2468369-01 through -06: The sample has elevated detection limits for all elements, with the exception of mercury, due to the dilution required by the sample matrix.

Cyanide, Total

The WG2004201-2 LCS recovery for cyanide, total (78%), associated with L2468369-01 through -06, is outside our in-house acceptance criteria, but within the vendor-certified acceptance limits. The results of the original analyses are reported.

Chromium, Hexavalent

The WG2002464-4 Insoluble MS recovery for chromium, hexavalent (30%), performed on L2468369-03, is below the acceptance criteria. The Soluble MS recovery for chromium, hexavalent (0%) was also below criteria. This has been attributed to matrix interference. A post-spike was performed with an acceptable recovery of 91%.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:  Kelly Stenstrom

Title: Technical Director/Representative Date: 12/03/24

ORGANICS

VOLATILES

Project Name: SOIL TESTING: 75 EVANS STREET **Lab Number:** L2468369

Project Number: 24552 **Report Date:** 12/03/24

SAMPLE RESULTS

Lab ID: L2468369-01
Client ID: 20241120-BORE1-SAMPLE 1
Sample Location: 75 EVANS ST., HAMBURG, NY

Date Collected: 11/20/24 14:00
Date Received: 11/20/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 11/30/24 13:35
Analyst: AJK
Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/kg	6.1	2.8	1
1,1-Dichloroethane	ND		ug/kg	1.2	0.18	1
Chloroform	ND		ug/kg	1.8	0.17	1
Carbon tetrachloride	ND		ug/kg	1.2	0.28	1
Tetrachloroethene	ND		ug/kg	0.61	0.24	1
Chlorobenzene	ND		ug/kg	0.61	0.15	1
1,2-Dichloroethane	ND		ug/kg	1.2	0.31	1
1,1,1-Trichloroethane	ND		ug/kg	0.61	0.20	1
Benzene	ND		ug/kg	0.61	0.20	1
Toluene	ND		ug/kg	1.2	0.66	1
Ethylbenzene	ND		ug/kg	1.2	0.17	1
Vinyl chloride	ND		ug/kg	1.2	0.41	1
1,1-Dichloroethene	ND		ug/kg	1.2	0.29	1
trans-1,2-Dichloroethene	ND		ug/kg	1.8	0.17	1
Trichloroethene	ND		ug/kg	0.61	0.17	1
1,2-Dichlorobenzene	ND		ug/kg	2.4	0.17	1
1,3-Dichlorobenzene	ND		ug/kg	2.4	0.18	1
1,4-Dichlorobenzene	ND		ug/kg	2.4	0.21	1
Methyl tert butyl ether	ND		ug/kg	2.4	0.24	1
p/m-Xylene	ND		ug/kg	2.4	0.68	1
o-Xylene	ND		ug/kg	1.2	0.35	1
cis-1,2-Dichloroethene	ND		ug/kg	1.2	0.21	1
Acetone	ND		ug/kg	12	5.8	1
2-Butanone	ND		ug/kg	12	2.7	1
n-Butylbenzene	ND		ug/kg	1.2	0.20	1
sec-Butylbenzene	ND		ug/kg	1.2	0.18	1
tert-Butylbenzene	ND		ug/kg	2.4	0.14	1
n-Propylbenzene	ND		ug/kg	1.2	0.21	1

Project Name: SOIL TESTING: 75 EVANS STREET **Lab Number:** L2468369

Project Number: 24552 **Report Date:** 12/03/24

SAMPLE RESULTS

Lab ID: L2468369-01 Date Collected: 11/20/24 14:00

Client ID: 20241120-BORE1-SAMPLE 1 Date Received: 11/20/24

Sample Location: 75 EVANS ST., HAMBURG, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3,5-Trimethylbenzene	ND		ug/kg	2.4	0.23	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.4	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	118		70-130
4-Bromofluorobenzene	127		70-130
Dibromofluoromethane	101		70-130

Project Name: SOIL TESTING: 75 EVANS STREET **Lab Number:** L2468369

Project Number: 24552 **Report Date:** 12/03/24

SAMPLE RESULTS

Lab ID: L2468369-02
Client ID: 20241120-BORE1-SAMPLE 2
Sample Location: 75 EVANS ST., HAMBURG, NY

Date Collected: 11/20/24 14:00
Date Received: 11/20/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 11/27/24 20:01
Analyst: JIC
Percent Solids: 76%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/kg	7.0	3.2	1
1,1-Dichloroethane	ND		ug/kg	1.4	0.20	1
Chloroform	ND		ug/kg	2.1	0.20	1
Carbon tetrachloride	ND		ug/kg	1.4	0.32	1
Tetrachloroethene	ND		ug/kg	0.70	0.27	1
Chlorobenzene	ND		ug/kg	0.70	0.18	1
1,2-Dichloroethane	ND		ug/kg	1.4	0.36	1
1,1,1-Trichloroethane	ND		ug/kg	0.70	0.23	1
Benzene	ND		ug/kg	0.70	0.23	1
Toluene	ND		ug/kg	1.4	0.76	1
Ethylbenzene	ND		ug/kg	1.4	0.20	1
Vinyl chloride	ND		ug/kg	1.4	0.47	1
1,1-Dichloroethene	ND		ug/kg	1.4	0.33	1
trans-1,2-Dichloroethene	ND		ug/kg	2.1	0.19	1
Trichloroethene	ND		ug/kg	0.70	0.19	1
1,2-Dichlorobenzene	ND		ug/kg	2.8	0.20	1
1,3-Dichlorobenzene	ND		ug/kg	2.8	0.21	1
1,4-Dichlorobenzene	ND		ug/kg	2.8	0.24	1
Methyl tert butyl ether	ND		ug/kg	2.8	0.28	1
p/m-Xylene	ND		ug/kg	2.8	0.78	1
o-Xylene	ND		ug/kg	1.4	0.41	1
cis-1,2-Dichloroethene	ND		ug/kg	1.4	0.24	1
Acetone	ND		ug/kg	14	6.7	1
2-Butanone	ND		ug/kg	14	3.1	1
n-Butylbenzene	ND		ug/kg	1.4	0.23	1
sec-Butylbenzene	ND		ug/kg	1.4	0.20	1
tert-Butylbenzene	ND		ug/kg	2.8	0.16	1
n-Propylbenzene	ND		ug/kg	1.4	0.24	1

Project Name: SOIL TESTING: 75 EVANS STREET **Lab Number:** L2468369

Project Number: 24552 **Report Date:** 12/03/24

SAMPLE RESULTS

Lab ID: L2468369-02 Date Collected: 11/20/24 14:00

Client ID: 20241120-BORE1-SAMPLE 2 Date Received: 11/20/24

Sample Location: 75 EVANS ST., HAMBURG, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3,5-Trimethylbenzene	ND		ug/kg	2.8	0.27	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.8	0.47	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	105		70-130

Project Name: SOIL TESTING: 75 EVANS STREET **Lab Number:** L2468369

Project Number: 24552 **Report Date:** 12/03/24

SAMPLE RESULTS

Lab ID: L2468369-03
Client ID: 20241120-BORE2-SAMPLE 3
Sample Location: 75 EVANS ST., HAMBURG, NY

Date Collected: 11/20/24 14:00
Date Received: 11/20/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 11/27/24 20:28
Analyst: JIC
Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/kg	5.7	2.6	1
1,1-Dichloroethane	ND		ug/kg	1.1	0.17	1
Chloroform	ND		ug/kg	1.7	0.16	1
Carbon tetrachloride	ND		ug/kg	1.1	0.26	1
Tetrachloroethene	ND		ug/kg	0.57	0.22	1
Chlorobenzene	ND		ug/kg	0.57	0.14	1
1,2-Dichloroethane	ND		ug/kg	1.1	0.30	1
1,1,1-Trichloroethane	ND		ug/kg	0.57	0.19	1
Benzene	ND		ug/kg	0.57	0.19	1
Toluene	ND		ug/kg	1.1	0.62	1
Ethylbenzene	ND		ug/kg	1.1	0.16	1
Vinyl chloride	ND		ug/kg	1.1	0.38	1
1,1-Dichloroethene	ND		ug/kg	1.1	0.27	1
trans-1,2-Dichloroethene	0.86	J	ug/kg	1.7	0.16	1
Trichloroethene	2.2		ug/kg	0.57	0.16	1
1,2-Dichlorobenzene	ND		ug/kg	2.3	0.16	1
1,3-Dichlorobenzene	ND		ug/kg	2.3	0.17	1
1,4-Dichlorobenzene	ND		ug/kg	2.3	0.20	1
Methyl tert butyl ether	ND		ug/kg	2.3	0.23	1
p/m-Xylene	ND		ug/kg	2.3	0.64	1
o-Xylene	ND		ug/kg	1.1	0.33	1
cis-1,2-Dichloroethene	1.1		ug/kg	1.1	0.20	1
Acetone	ND		ug/kg	11	5.5	1
2-Butanone	ND		ug/kg	11	2.6	1
n-Butylbenzene	ND		ug/kg	1.1	0.19	1
sec-Butylbenzene	ND		ug/kg	1.1	0.17	1
tert-Butylbenzene	ND		ug/kg	2.3	0.14	1
n-Propylbenzene	ND		ug/kg	1.1	0.20	1

Project Name: SOIL TESTING: 75 EVANS STREET **Lab Number:** L2468369

Project Number: 24552 **Report Date:** 12/03/24

SAMPLE RESULTS

Lab ID: L2468369-03 Date Collected: 11/20/24 14:00

Client ID: 20241120-BORE2-SAMPLE 3 Date Received: 11/20/24

Sample Location: 75 EVANS ST., HAMBURG, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3,5-Trimethylbenzene	ND		ug/kg	2.3	0.22	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.3	0.38	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	100		70-130

Project Name: SOIL TESTING: 75 EVANS STREET **Lab Number:** L2468369

Project Number: 24552 **Report Date:** 12/03/24

SAMPLE RESULTS

Lab ID: L2468369-04
Client ID: 20241120-BORE2-SAMPLE 4
Sample Location: 75 EVANS ST., HAMBURG, NY

Date Collected: 11/20/24 14:00
Date Received: 11/20/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 11/27/24 20:55
Analyst: JIC
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/kg	6.2	2.9	1
1,1-Dichloroethane	ND		ug/kg	1.2	0.18	1
Chloroform	ND		ug/kg	1.9	0.18	1
Carbon tetrachloride	ND		ug/kg	1.2	0.29	1
Tetrachloroethene	ND		ug/kg	0.62	0.24	1
Chlorobenzene	ND		ug/kg	0.62	0.16	1
1,2-Dichloroethane	ND		ug/kg	1.2	0.32	1
1,1,1-Trichloroethane	ND		ug/kg	0.62	0.21	1
Benzene	ND		ug/kg	0.62	0.21	1
Toluene	ND		ug/kg	1.2	0.68	1
Ethylbenzene	ND		ug/kg	1.2	0.18	1
Vinyl chloride	ND		ug/kg	1.2	0.42	1
1,1-Dichloroethene	ND		ug/kg	1.2	0.30	1
trans-1,2-Dichloroethene	ND		ug/kg	1.9	0.17	1
Trichloroethene	ND		ug/kg	0.62	0.17	1
1,2-Dichlorobenzene	ND		ug/kg	2.5	0.18	1
1,3-Dichlorobenzene	ND		ug/kg	2.5	0.18	1
1,4-Dichlorobenzene	ND		ug/kg	2.5	0.21	1
Methyl tert butyl ether	ND		ug/kg	2.5	0.25	1
p/m-Xylene	ND		ug/kg	2.5	0.70	1
o-Xylene	ND		ug/kg	1.2	0.36	1
cis-1,2-Dichloroethene	ND		ug/kg	1.2	0.22	1
Acetone	6.5	J	ug/kg	12	6.0	1
2-Butanone	ND		ug/kg	12	2.8	1
n-Butylbenzene	ND		ug/kg	1.2	0.21	1
sec-Butylbenzene	ND		ug/kg	1.2	0.18	1
tert-Butylbenzene	ND		ug/kg	2.5	0.15	1
n-Propylbenzene	ND		ug/kg	1.2	0.21	1

Project Name: SOIL TESTING: 75 EVANS STREET **Lab Number:** L2468369

Project Number: 24552 **Report Date:** 12/03/24

SAMPLE RESULTS

Lab ID: L2468369-04 Date Collected: 11/20/24 14:00

Client ID: 20241120-BORE2-SAMPLE 4 Date Received: 11/20/24

Sample Location: 75 EVANS ST., HAMBURG, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3,5-Trimethylbenzene	ND		ug/kg	2.5	0.24	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.5	0.42	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	93		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	106		70-130

Project Name: SOIL TESTING: 75 EVANS STREET **Lab Number:** L2468369

Project Number: 24552 **Report Date:** 12/03/24

SAMPLE RESULTS

Lab ID: L2468369-05
Client ID: 20241120-BORE3-SAMPLE 5
Sample Location: 75 EVANS ST., HAMBURG, NY

Date Collected: 11/20/24 14:00
Date Received: 11/20/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 11/30/24 14:00
Analyst: AJK
Percent Solids: 92%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/kg	6.2	2.8	1
1,1-Dichloroethane	ND		ug/kg	1.2	0.18	1
Chloroform	ND		ug/kg	1.8	0.17	1
Carbon tetrachloride	ND		ug/kg	1.2	0.28	1
Tetrachloroethene	ND		ug/kg	0.62	0.24	1
Chlorobenzene	ND		ug/kg	0.62	0.16	1
1,2-Dichloroethane	ND		ug/kg	1.2	0.32	1
1,1,1-Trichloroethane	ND		ug/kg	0.62	0.21	1
Benzene	ND		ug/kg	0.62	0.20	1
Toluene	ND		ug/kg	1.2	0.67	1
Ethylbenzene	ND		ug/kg	1.2	0.17	1
Vinyl chloride	ND		ug/kg	1.2	0.41	1
1,1-Dichloroethene	ND		ug/kg	1.2	0.29	1
trans-1,2-Dichloroethene	ND		ug/kg	1.8	0.17	1
Trichloroethene	0.64		ug/kg	0.62	0.17	1
1,2-Dichlorobenzene	ND		ug/kg	2.5	0.18	1
1,3-Dichlorobenzene	ND		ug/kg	2.5	0.18	1
1,4-Dichlorobenzene	ND		ug/kg	2.5	0.21	1
Methyl tert butyl ether	ND		ug/kg	2.5	0.25	1
p/m-Xylene	ND		ug/kg	2.5	0.69	1
o-Xylene	ND		ug/kg	1.2	0.36	1
cis-1,2-Dichloroethene	ND		ug/kg	1.2	0.22	1
Acetone	ND		ug/kg	12	5.9	1
2-Butanone	ND		ug/kg	12	2.7	1
n-Butylbenzene	ND		ug/kg	1.2	0.21	1
sec-Butylbenzene	ND		ug/kg	1.2	0.18	1
tert-Butylbenzene	ND		ug/kg	2.5	0.14	1
n-Propylbenzene	ND		ug/kg	1.2	0.21	1

Project Name: SOIL TESTING: 75 EVANS STREET **Lab Number:** L2468369

Project Number: 24552 **Report Date:** 12/03/24

SAMPLE RESULTS

Lab ID: L2468369-05 Date Collected: 11/20/24 14:00

Client ID: 20241120-BORE3-SAMPLE 5 Date Received: 11/20/24

Sample Location: 75 EVANS ST., HAMBURG, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3,5-Trimethylbenzene	ND		ug/kg	2.5	0.24	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.5	0.41	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	114		70-130
4-Bromofluorobenzene	122		70-130
Dibromofluoromethane	99		70-130

Project Name: SOIL TESTING: 75 EVANS STREET **Lab Number:** L2468369

Project Number: 24552 **Report Date:** 12/03/24

SAMPLE RESULTS

Lab ID: L2468369-06
Client ID: 20241120-BORE3-SAMPLE 6
Sample Location: 75 EVANS ST., HAMBURG, NY

Date Collected: 11/20/24 14:00
Date Received: 11/20/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 11/30/24 14:25
Analyst: AJK
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/kg	4.2	1.9	1
1,1-Dichloroethane	ND		ug/kg	0.84	0.12	1
Chloroform	ND		ug/kg	1.3	0.12	1
Carbon tetrachloride	ND		ug/kg	0.84	0.19	1
Tetrachloroethene	ND		ug/kg	0.42	0.16	1
Chlorobenzene	ND		ug/kg	0.42	0.11	1
1,2-Dichloroethane	ND		ug/kg	0.84	0.22	1
1,1,1-Trichloroethane	ND		ug/kg	0.42	0.14	1
Benzene	ND		ug/kg	0.42	0.14	1
Toluene	ND		ug/kg	0.84	0.46	1
Ethylbenzene	ND		ug/kg	0.84	0.12	1
Vinyl chloride	ND		ug/kg	0.84	0.28	1
1,1-Dichloroethene	ND		ug/kg	0.84	0.20	1
trans-1,2-Dichloroethene	ND		ug/kg	1.3	0.12	1
Trichloroethene	ND		ug/kg	0.42	0.12	1
1,2-Dichlorobenzene	ND		ug/kg	1.7	0.12	1
1,3-Dichlorobenzene	ND		ug/kg	1.7	0.12	1
1,4-Dichlorobenzene	ND		ug/kg	1.7	0.14	1
Methyl tert butyl ether	ND		ug/kg	1.7	0.17	1
p/m-Xylene	ND		ug/kg	1.7	0.47	1
o-Xylene	ND		ug/kg	0.84	0.24	1
cis-1,2-Dichloroethene	ND		ug/kg	0.84	0.15	1
Acetone	ND		ug/kg	8.4	4.1	1
2-Butanone	ND		ug/kg	8.4	1.9	1
n-Butylbenzene	ND		ug/kg	0.84	0.14	1
sec-Butylbenzene	ND		ug/kg	0.84	0.12	1
tert-Butylbenzene	ND		ug/kg	1.7	0.10	1
n-Propylbenzene	ND		ug/kg	0.84	0.14	1

Project Name: SOIL TESTING: 75 EVANS STREET **Lab Number:** L2468369

Project Number: 24552 **Report Date:** 12/03/24

SAMPLE RESULTS

Lab ID: L2468369-06 Date Collected: 11/20/24 14:00

Client ID: 20241120-BORE3-SAMPLE 6 Date Received: 11/20/24

Sample Location: 75 EVANS ST., HAMBURG, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3,5-Trimethylbenzene	ND		ug/kg	1.7	0.16	1
1,2,4-Trimethylbenzene	ND		ug/kg	1.7	0.28	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	115		70-130
4-Bromofluorobenzene	120		70-130
Dibromofluoromethane	100		70-130

Project Name: SOIL TESTING: 75 EVANS STREET **Lab Number:** L2468369

Project Number: 24552 **Report Date:** 12/03/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 11/27/24 11:23
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 02-04 Batch: WG2003550-5					
Methylene chloride	ND		ug/kg	5.0	2.3
1,1-Dichloroethane	ND		ug/kg	1.0	0.14
Chloroform	ND		ug/kg	1.5	0.14
Carbon tetrachloride	ND		ug/kg	1.0	0.23
Tetrachloroethene	ND		ug/kg	0.50	0.20
Chlorobenzene	ND		ug/kg	0.50	0.13
1,2-Dichloroethane	ND		ug/kg	1.0	0.26
1,1,1-Trichloroethane	ND		ug/kg	0.50	0.17
Benzene	ND		ug/kg	0.50	0.17
Toluene	ND		ug/kg	1.0	0.54
Ethylbenzene	ND		ug/kg	1.0	0.14
Vinyl chloride	ND		ug/kg	1.0	0.34
1,1-Dichloroethene	ND		ug/kg	1.0	0.24
trans-1,2-Dichloroethene	ND		ug/kg	1.5	0.14
Trichloroethene	ND		ug/kg	0.50	0.14
1,2-Dichlorobenzene	ND		ug/kg	2.0	0.14
1,3-Dichlorobenzene	ND		ug/kg	2.0	0.15
1,4-Dichlorobenzene	ND		ug/kg	2.0	0.17
Methyl tert butyl ether	ND		ug/kg	2.0	0.20
p/m-Xylene	ND		ug/kg	2.0	0.56
o-Xylene	ND		ug/kg	1.0	0.29
cis-1,2-Dichloroethene	ND		ug/kg	1.0	0.18
Acetone	ND		ug/kg	10	4.8
2-Butanone	ND		ug/kg	10	2.2
n-Butylbenzene	ND		ug/kg	1.0	0.17
sec-Butylbenzene	ND		ug/kg	1.0	0.15
tert-Butylbenzene	ND		ug/kg	2.0	0.12
n-Propylbenzene	ND		ug/kg	1.0	0.17
1,3,5-Trimethylbenzene	ND		ug/kg	2.0	0.19

Project Name: SOIL TESTING: 75 EVANS STREET **Lab Number:** L2468369

Project Number: 24552 **Report Date:** 12/03/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 11/27/24 11:23
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 02-04 Batch: WG2003550-5					
1,2,4-Trimethylbenzene	ND		ug/kg	2.0	0.33

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	92		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	101		70-130

Project Name: SOIL TESTING: 75 EVANS STREET **Lab Number:** L2468369

Project Number: 24552 **Report Date:** 12/03/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 11/30/24 11:55
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 01,05-06 Batch: WG2003928-5					
Methylene chloride	ND		ug/kg	5.0	2.3
1,1-Dichloroethane	ND		ug/kg	1.0	0.14
Chloroform	1.0	J	ug/kg	1.5	0.14
Carbon tetrachloride	ND		ug/kg	1.0	0.23
Tetrachloroethene	ND		ug/kg	0.50	0.20
Chlorobenzene	ND		ug/kg	0.50	0.13
1,2-Dichloroethane	ND		ug/kg	1.0	0.26
1,1,1-Trichloroethane	ND		ug/kg	0.50	0.17
Benzene	ND		ug/kg	0.50	0.17
Toluene	ND		ug/kg	1.0	0.54
Ethylbenzene	ND		ug/kg	1.0	0.14
Vinyl chloride	ND		ug/kg	1.0	0.34
1,1-Dichloroethene	ND		ug/kg	1.0	0.24
trans-1,2-Dichloroethene	ND		ug/kg	1.5	0.14
Trichloroethene	ND		ug/kg	0.50	0.14
1,2-Dichlorobenzene	ND		ug/kg	2.0	0.14
1,3-Dichlorobenzene	ND		ug/kg	2.0	0.15
1,4-Dichlorobenzene	ND		ug/kg	2.0	0.17
Methyl tert butyl ether	ND		ug/kg	2.0	0.20
p/m-Xylene	ND		ug/kg	2.0	0.56
o-Xylene	ND		ug/kg	1.0	0.29
cis-1,2-Dichloroethene	ND		ug/kg	1.0	0.18
Acetone	ND		ug/kg	10	4.8
2-Butanone	ND		ug/kg	10	2.2
n-Butylbenzene	ND		ug/kg	1.0	0.17
sec-Butylbenzene	ND		ug/kg	1.0	0.15
tert-Butylbenzene	ND		ug/kg	2.0	0.12
n-Propylbenzene	ND		ug/kg	1.0	0.17
1,3,5-Trimethylbenzene	ND		ug/kg	2.0	0.19

Project Name: SOIL TESTING: 75 EVANS STREET **Lab Number:** L2468369

Project Number: 24552 **Report Date:** 12/03/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 11/30/24 11:55
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 01,05-06 Batch: WG2003928-5					
1,2,4-Trimethylbenzene	ND		ug/kg	2.0	0.33

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	113		70-130
4-Bromofluorobenzene	117		70-130
Dibromofluoromethane	95		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: SOIL TESTING: 75 EVANS STREET

Project Number: 24552

Lab Number: L2468369

Report Date: 12/03/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 02-04 Batch: WG2003550-3 WG2003550-4								
Methylene chloride	80		77		70-130	4		30
1,1-Dichloroethane	92		94		70-130	2		30
Chloroform	94		97		70-130	3		30
Carbon tetrachloride	87		88		70-130	1		30
Tetrachloroethene	90		91		70-130	1		30
Chlorobenzene	96		98		70-130	2		30
1,2-Dichloroethane	93		96		70-130	3		30
1,1,1-Trichloroethane	94		94		70-130	0		30
Benzene	94		95		70-130	1		30
Toluene	93		96		70-130	3		30
Ethylbenzene	95		97		70-130	2		30
Vinyl chloride	84		83		67-130	1		30
1,1-Dichloroethene	85		82		65-135	4		30
trans-1,2-Dichloroethene	91		86		70-130	6		30
Trichloroethene	97		97		70-130	0		30
1,2-Dichlorobenzene	100		102		70-130	2		30
1,3-Dichlorobenzene	100		101		70-130	1		30
1,4-Dichlorobenzene	100		101		70-130	1		30
Methyl tert butyl ether	97		97		66-130	0		30
p/m-Xylene	95		95		70-130	0		30
o-Xylene	95		96		70-130	1		30
cis-1,2-Dichloroethene	98		100		70-130	2		30
Acetone	91		85		54-140	7		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: SOIL TESTING: 75 EVANS STREET

Project Number: 24552

Lab Number: L2468369

Report Date: 12/03/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 02-04 Batch: WG2003550-3 WG2003550-4								
2-Butanone	84		90		70-130	7		30
n-Butylbenzene	103		103		70-130	0		30
sec-Butylbenzene	98		100		70-130	2		30
tert-Butylbenzene	97		97		70-130	0		30
n-Propylbenzene	98		100		70-130	2		30
1,3,5-Trimethylbenzene	98		99		70-130	1		30
1,2,4-Trimethylbenzene	101		101		70-130	0		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	95		94		70-130
Toluene-d8	95		95		70-130
4-Bromofluorobenzene	105		102		70-130
Dibromofluoromethane	99		96		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: SOIL TESTING: 75 EVANS STREET

Project Number: 24552

Lab Number: L2468369

Report Date: 12/03/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01,05-06 Batch: WG2003928-3 WG2003928-4								
Methylene chloride	102		97		70-130	5		30
1,1-Dichloroethane	107		103		70-130	4		30
Chloroform	94		98		70-130	4		30
Carbon tetrachloride	94		93		70-130	1		30
Tetrachloroethene	106		106		70-130	0		30
Chlorobenzene	106		104		70-130	2		30
1,2-Dichloroethane	90		89		70-130	1		30
1,1,1-Trichloroethane	99		97		70-130	2		30
Benzene	105		102		70-130	3		30
Toluene	113		109		70-130	4		30
Ethylbenzene	110		107		70-130	3		30
Vinyl chloride	99		95		67-130	4		30
1,1-Dichloroethene	103		100		65-135	3		30
trans-1,2-Dichloroethene	103		100		70-130	3		30
Trichloroethene	102		102		70-130	0		30
1,2-Dichlorobenzene	112		110		70-130	2		30
1,3-Dichlorobenzene	111		110		70-130	1		30
1,4-Dichlorobenzene	113		110		70-130	3		30
Methyl tert butyl ether	89		87		66-130	2		30
p/m-Xylene	109		107		70-130	2		30
o-Xylene	107		105		70-130	2		30
cis-1,2-Dichloroethene	100		97		70-130	3		30
Acetone	84		67		54-140	23		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: SOIL TESTING: 75 EVANS STREET

Project Number: 24552

Lab Number: L2468369

Report Date: 12/03/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01,05-06 Batch: WG2003928-3 WG2003928-4								
2-Butanone	80		74		70-130	8		30
n-Butylbenzene	123		117		70-130	5		30
sec-Butylbenzene	120		118		70-130	2		30
tert-Butylbenzene	119		116		70-130	3		30
n-Propylbenzene	121		120		70-130	1		30
1,3,5-Trimethylbenzene	120		118		70-130	2		30
1,2,4-Trimethylbenzene	121		118		70-130	3		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	98		97		70-130
Toluene-d8	114		115		70-130
4-Bromofluorobenzene	114		119		70-130
Dibromofluoromethane	96		97		70-130

SEMIVOLATILES

Project Name: SOIL TESTING: 75 EVANS STREET
Lab Number: L2468369
Project Number: 24552
Report Date: 12/03/24

SAMPLE RESULTS

Lab ID: L2468369-01
Client ID: 20241120-BORE1-SAMPLE 1
Sample Location: 75 EVANS ST., HAMBURG, NY

Date Collected: 11/20/24 14:00
Date Received: 11/20/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 11/27/24 02:11
Analyst: IM
Percent Solids: 86%

Extraction Method: EPA 3546
Extraction Date: 11/26/24 00:14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	150	20.	1
Hexachlorobenzene	ND		ug/kg	110	21.	1
Fluoranthene	ND		ug/kg	110	22.	1
Naphthalene	ND		ug/kg	190	23.	1
Nitrobenzene	ND		ug/kg	170	28.	1
Benzo(a)anthracene	ND		ug/kg	110	21.	1
Benzo(a)pyrene	ND		ug/kg	150	46.	1
Benzo(b)fluoranthene	ND		ug/kg	110	32.	1
Benzo(k)fluoranthene	ND		ug/kg	110	30.	1
Chrysene	ND		ug/kg	110	20.	1
Acenaphthylene	ND		ug/kg	150	29.	1
Anthracene	ND		ug/kg	110	37.	1
Benzo(ghi)perylene	ND		ug/kg	150	22.	1
Fluorene	ND		ug/kg	190	18.	1
Phenanthrene	ND		ug/kg	110	23.	1
Dibenzo(a,h)anthracene	ND		ug/kg	110	22.	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	150	26.	1
Pyrene	ND		ug/kg	110	19.	1
Aniline	ND		ug/kg	230	90.	1
Dibenzofuran	ND		ug/kg	190	18.	1
Pentachlorophenol	ND		ug/kg	150	42.	1
Phenol	ND		ug/kg	190	29.	1
2-Methylphenol	ND		ug/kg	190	30.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	270	30.	1
1,4-Dioxane	ND		ug/kg	29	8.8	1

Project Name: SOIL TESTING: 75 EVANS STREET **Lab Number:** L2468369

Project Number: 24552 **Report Date:** 12/03/24

SAMPLE RESULTS

Lab ID: L2468369-01 Date Collected: 11/20/24 14:00

Client ID: 20241120-BORE1-SAMPLE 1 Date Received: 11/20/24

Sample Location: 75 EVANS ST., HAMBURG, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	93		25-120
Phenol-d6	90		10-120
Nitrobenzene-d5	89		23-120
2-Fluorobiphenyl	80		30-120
2,4,6-Tribromophenol	83		10-136
4-Terphenyl-d14	78		18-120

Project Name: SOIL TESTING: 75 EVANS STREET
Lab Number: L2468369
Project Number: 24552
Report Date: 12/03/24

SAMPLE RESULTS

Lab ID: L2468369-02
Client ID: 20241120-BORE1-SAMPLE 2
Sample Location: 75 EVANS ST., HAMBURG, NY
Date Collected: 11/20/24 14:00
Date Received: 11/20/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 11/27/24 01:47
Analyst: IM
Percent Solids: 76%
Extraction Method: EPA 3546
Extraction Date: 11/26/24 00:14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	170	22.	1
Hexachlorobenzene	ND		ug/kg	130	24.	1
Fluoranthene	ND		ug/kg	130	25.	1
Naphthalene	ND		ug/kg	220	26.	1
Nitrobenzene	ND		ug/kg	190	32.	1
Benzo(a)anthracene	ND		ug/kg	130	24.	1
Benzo(a)pyrene	ND		ug/kg	170	53.	1
Benzo(b)fluoranthene	ND		ug/kg	130	36.	1
Benzo(k)fluoranthene	ND		ug/kg	130	34.	1
Chrysene	ND		ug/kg	130	22.	1
Acenaphthylene	ND		ug/kg	170	33.	1
Anthracene	ND		ug/kg	130	42.	1
Benzo(ghi)perylene	ND		ug/kg	170	25.	1
Fluorene	ND		ug/kg	220	21.	1
Phenanthrene	ND		ug/kg	130	26.	1
Dibenzo(a,h)anthracene	ND		ug/kg	130	25.	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	170	30.	1
Pyrene	ND		ug/kg	130	21.	1
Aniline	ND		ug/kg	260	100	1
Dibenzofuran	ND		ug/kg	220	20.	1
Pentachlorophenol	ND		ug/kg	170	48.	1
Phenol	ND		ug/kg	220	33.	1
2-Methylphenol	ND		ug/kg	220	34.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	310	34.	1
1,4-Dioxane	ND		ug/kg	32	9.9	1

Project Name: SOIL TESTING: 75 EVANS STREET **Lab Number:** L2468369

Project Number: 24552 **Report Date:** 12/03/24

SAMPLE RESULTS

Lab ID: L2468369-02 Date Collected: 11/20/24 14:00

Client ID: 20241120-BORE1-SAMPLE 2 Date Received: 11/20/24

Sample Location: 75 EVANS ST., HAMBURG, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	77		25-120
Phenol-d6	76		10-120
Nitrobenzene-d5	74		23-120
2-Fluorobiphenyl	72		30-120
2,4,6-Tribromophenol	62		10-136
4-Terphenyl-d14	65		18-120

Project Name: SOIL TESTING: 75 EVANS STREET **Lab Number:** L2468369

Project Number: 24552 **Report Date:** 12/03/24

SAMPLE RESULTS

Lab ID: L2468369-03
Client ID: 20241120-BORE2-SAMPLE 3
Sample Location: 75 EVANS ST., HAMBURG, NY

Date Collected: 11/20/24 14:00
Date Received: 11/20/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 11/27/24 01:22
Analyst: IM
Percent Solids: 86%

Extraction Method: EPA 3546
Extraction Date: 11/26/24 00:14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	150	20.	1
Hexachlorobenzene	ND		ug/kg	120	22.	1
Fluoranthene	ND		ug/kg	120	22.	1
Naphthalene	ND		ug/kg	190	24.	1
Nitrobenzene	ND		ug/kg	170	29.	1
Benzo(a)anthracene	ND		ug/kg	120	22.	1
Benzo(a)pyrene	ND		ug/kg	150	47.	1
Benzo(b)fluoranthene	ND		ug/kg	120	32.	1
Benzo(k)fluoranthene	ND		ug/kg	120	31.	1
Chrysene	ND		ug/kg	120	20.	1
Acenaphthylene	ND		ug/kg	150	30.	1
Anthracene	ND		ug/kg	120	38.	1
Benzo(ghi)perylene	ND		ug/kg	150	23.	1
Fluorene	ND		ug/kg	190	19.	1
Phenanthrene	ND		ug/kg	120	24.	1
Dibenzo(a,h)anthracene	ND		ug/kg	120	22.	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	150	27.	1
Pyrene	ND		ug/kg	120	19.	1
Aniline	ND		ug/kg	230	91.	1
Dibenzofuran	ND		ug/kg	190	18.	1
Pentachlorophenol	ND		ug/kg	150	42.	1
Phenol	ND		ug/kg	190	29.	1
2-Methylphenol	ND		ug/kg	190	30.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	280	30.	1
1,4-Dioxane	ND		ug/kg	29	8.9	1

Project Name: SOIL TESTING: 75 EVANS STREET **Lab Number:** L2468369

Project Number: 24552 **Report Date:** 12/03/24

SAMPLE RESULTS

Lab ID: L2468369-03 Date Collected: 11/20/24 14:00

Client ID: 20241120-BORE2-SAMPLE 3 Date Received: 11/20/24

Sample Location: 75 EVANS ST., HAMBURG, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	73		25-120
Phenol-d6	70		10-120
Nitrobenzene-d5	70		23-120
2-Fluorobiphenyl	64		30-120
2,4,6-Tribromophenol	60		10-136
4-Terphenyl-d14	57		18-120

Project Name: SOIL TESTING: 75 EVANS STREET **Lab Number:** L2468369

Project Number: 24552 **Report Date:** 12/03/24

SAMPLE RESULTS

Lab ID: L2468369-04
Client ID: 20241120-BORE2-SAMPLE 4
Sample Location: 75 EVANS ST., HAMBURG, NY

Date Collected: 11/20/24 14:00
Date Received: 11/20/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 11/27/24 02:36
Analyst: IM
Percent Solids: 82%

Extraction Method: EPA 3546
Extraction Date: 11/26/24 00:14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	160	20.	1
Hexachlorobenzene	ND		ug/kg	120	22.	1
Fluoranthene	ND		ug/kg	120	23.	1
Naphthalene	ND		ug/kg	200	24.	1
Nitrobenzene	ND		ug/kg	180	29.	1
Benzo(a)anthracene	ND		ug/kg	120	22.	1
Benzo(a)pyrene	ND		ug/kg	160	48.	1
Benzo(b)fluoranthene	ND		ug/kg	120	33.	1
Benzo(k)fluoranthene	ND		ug/kg	120	32.	1
Chrysene	ND		ug/kg	120	21.	1
Acenaphthylene	ND		ug/kg	160	31.	1
Anthracene	ND		ug/kg	120	39.	1
Benzo(ghi)perylene	ND		ug/kg	160	23.	1
Fluorene	ND		ug/kg	200	19.	1
Phenanthrene	ND		ug/kg	120	24.	1
Dibenzo(a,h)anthracene	ND		ug/kg	120	23.	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	160	28.	1
Pyrene	ND		ug/kg	120	20.	1
Aniline	ND		ug/kg	240	94.	1
Dibenzofuran	ND		ug/kg	200	19.	1
Pentachlorophenol	ND		ug/kg	160	44.	1
Phenol	ND		ug/kg	200	30.	1
2-Methylphenol	ND		ug/kg	200	31.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	280	31.	1
1,4-Dioxane	ND		ug/kg	30	9.1	1

Project Name: SOIL TESTING: 75 EVANS STREET **Lab Number:** L2468369

Project Number: 24552 **Report Date:** 12/03/24

SAMPLE RESULTS

Lab ID: L2468369-04 Date Collected: 11/20/24 14:00

Client ID: 20241120-BORE2-SAMPLE 4 Date Received: 11/20/24

Sample Location: 75 EVANS ST., HAMBURG, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	83		25-120
Phenol-d6	82		10-120
Nitrobenzene-d5	80		23-120
2-Fluorobiphenyl	74		30-120
2,4,6-Tribromophenol	53		10-136
4-Terphenyl-d14	74		18-120

Project Name: SOIL TESTING: 75 EVANS STREET
Lab Number: L2468369
Project Number: 24552
Report Date: 12/03/24

SAMPLE RESULTS

Lab ID: L2468369-05
Client ID: 20241120-BORE3-SAMPLE 5
Sample Location: 75 EVANS ST., HAMBURG, NY
Date Collected: 11/20/24 14:00
Date Received: 11/20/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 11/27/24 05:03
Analyst: IM
Percent Solids: 92%

Extraction Method: EPA 3546
Extraction Date: 11/26/24 00:14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	140	18.	1
Hexachlorobenzene	ND		ug/kg	100	20.	1
Fluoranthene	ND		ug/kg	100	20.	1
Naphthalene	ND		ug/kg	180	21.	1
Nitrobenzene	ND		ug/kg	160	26.	1
Benzo(a)anthracene	ND		ug/kg	100	20.	1
Benzo(a)pyrene	ND		ug/kg	140	43.	1
Benzo(b)fluoranthene	ND		ug/kg	100	30.	1
Benzo(k)fluoranthene	ND		ug/kg	100	28.	1
Chrysene	ND		ug/kg	100	18.	1
Acenaphthylene	ND		ug/kg	140	27.	1
Anthracene	ND		ug/kg	100	34.	1
Benzo(ghi)perylene	ND		ug/kg	140	21.	1
Fluorene	ND		ug/kg	180	17.	1
Phenanthrene	ND		ug/kg	100	21.	1
Dibenzo(a,h)anthracene	ND		ug/kg	100	20.	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	140	25.	1
Pyrene	ND		ug/kg	100	18.	1
Aniline	ND		ug/kg	210	83.	1
Dibenzofuran	ND		ug/kg	180	17.	1
Pentachlorophenol	ND		ug/kg	140	39.	1
Phenol	ND		ug/kg	180	27.	1
2-Methylphenol	ND		ug/kg	180	27.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	250	28.	1
1,4-Dioxane	ND		ug/kg	26	8.1	1

Project Name: SOIL TESTING: 75 EVANS STREET **Lab Number:** L2468369

Project Number: 24552 **Report Date:** 12/03/24

SAMPLE RESULTS

Lab ID: L2468369-05 Date Collected: 11/20/24 14:00

Client ID: 20241120-BORE3-SAMPLE 5 Date Received: 11/20/24

Sample Location: 75 EVANS ST., HAMBURG, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	99		25-120
Phenol-d6	97		10-120
Nitrobenzene-d5	94		23-120
2-Fluorobiphenyl	89		30-120
2,4,6-Tribromophenol	88		10-136
4-Terphenyl-d14	89		18-120

Project Name: SOIL TESTING: 75 EVANS STREET
Lab Number: L2468369
Project Number: 24552
Report Date: 12/03/24

SAMPLE RESULTS

Lab ID: L2468369-06
Client ID: 20241120-BORE3-SAMPLE 6
Sample Location: 75 EVANS ST., HAMBURG, NY
Date Collected: 11/20/24 14:00
Date Received: 11/20/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 11/27/24 04:14
Analyst: IM
Percent Solids: 91%

Extraction Method: EPA 3546
Extraction Date: 11/26/24 00:14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	140	19.	1
Hexachlorobenzene	ND		ug/kg	110	20.	1
Fluoranthene	21	J	ug/kg	110	21.	1
Naphthalene	ND		ug/kg	180	22.	1
Nitrobenzene	ND		ug/kg	160	27.	1
Benzo(a)anthracene	ND		ug/kg	110	20.	1
Benzo(a)pyrene	ND		ug/kg	140	44.	1
Benzo(b)fluoranthene	ND		ug/kg	110	31.	1
Benzo(k)fluoranthene	ND		ug/kg	110	29.	1
Chrysene	49	J	ug/kg	110	19.	1
Acenaphthylene	ND		ug/kg	140	28.	1
Anthracene	ND		ug/kg	110	35.	1
Benzo(ghi)perylene	ND		ug/kg	140	21.	1
Fluorene	ND		ug/kg	180	18.	1
Phenanthrene	76	J	ug/kg	110	22.	1
Dibenzo(a,h)anthracene	ND		ug/kg	110	21.	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	140	25.	1
Pyrene	23	J	ug/kg	110	18.	1
Aniline	ND		ug/kg	220	86.	1
Dibenzofuran	ND		ug/kg	180	17.	1
Pentachlorophenol	ND		ug/kg	140	40.	1
Phenol	ND		ug/kg	180	27.	1
2-Methylphenol	ND		ug/kg	180	28.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	260	28.	1
1,4-Dioxane	ND		ug/kg	27	8.4	1

Project Name: SOIL TESTING: 75 EVANS STREET **Lab Number:** L2468369

Project Number: 24552 **Report Date:** 12/03/24

SAMPLE RESULTS

Lab ID: L2468369-06 Date Collected: 11/20/24 14:00

Client ID: 20241120-BORE3-SAMPLE 6 Date Received: 11/20/24

Sample Location: 75 EVANS ST., HAMBURG, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Semivolatile Organics by GC/MS - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	68		25-120
Phenol-d6	69		10-120
Nitrobenzene-d5	68		23-120
2-Fluorobiphenyl	68		30-120
2,4,6-Tribromophenol	29		10-136
4-Terphenyl-d14	68		18-120

Project Name: SOIL TESTING: 75 EVANS STREET **Lab Number:** L2468369

Project Number: 24552 **Report Date:** 12/03/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 11/26/24 22:55
Analyst: IM

Extraction Method: EPA 3546
Extraction Date: 11/26/24 00:14

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-06 Batch: WG2002286-1					
Acenaphthene	ND		ug/kg	130	17.
Hexachlorobenzene	ND		ug/kg	99	18.
Fluoranthene	ND		ug/kg	99	19.
Naphthalene	ND		ug/kg	160	20.
Nitrobenzene	ND		ug/kg	150	24.
Benzo(a)anthracene	ND		ug/kg	99	19.
Benzo(a)pyrene	ND		ug/kg	130	40.
Benzo(b)fluoranthene	ND		ug/kg	99	28.
Benzo(k)fluoranthene	ND		ug/kg	99	26.
Chrysene	ND		ug/kg	99	17.
Acenaphthylene	ND		ug/kg	130	26.
Anthracene	ND		ug/kg	99	32.
Benzo(ghi)perylene	ND		ug/kg	130	19.
Fluorene	ND		ug/kg	160	16.
Phenanthrene	ND		ug/kg	99	20.
Dibenzo(a,h)anthracene	ND		ug/kg	99	19.
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	23.
Pyrene	ND		ug/kg	99	16.
Aniline	ND		ug/kg	200	78.
Dibenzofuran	ND		ug/kg	160	16.
Pentachlorophenol	ND		ug/kg	130	36.
Phenol	ND		ug/kg	160	25.
2-Methylphenol	ND		ug/kg	160	26.
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	26.
1,4-Dioxane	ND		ug/kg	25	7.6

Project Name: SOIL TESTING: 75 EVANS STREET
Project Number: 24552
Lab Number: L2468369
Report Date: 12/03/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 11/26/24 22:55
Analyst: IM

Extraction Method: EPA 3546
Extraction Date: 11/26/24 00:14

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-06 Batch: WG2002286-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	76		25-120
Phenol-d6	75		10-120
Nitrobenzene-d5	73		23-120
2-Fluorobiphenyl	71		30-120
2,4,6-Tribromophenol	74		10-136
4-Terphenyl-d14	76		18-120

Lab Control Sample Analysis
Batch Quality Control

Project Name: SOIL TESTING: 75 EVANS STREET
Project Number: 24552

Lab Number: L2468369
Report Date: 12/03/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-06 Batch: WG2002286-2 WG2002286-3								
Acenaphthene	92		74		31-137	22		50
Hexachlorobenzene	88		72		40-140	20		50
Fluoranthene	95		77		40-140	21		50
Naphthalene	94		75		40-140	22		50
Nitrobenzene	93		75		40-140	21		50
Benzo(a)anthracene	93		75		40-140	21		50
Benzo(a)pyrene	100		81		40-140	21		50
Benzo(b)fluoranthene	97		80		40-140	19		50
Benzo(k)fluoranthene	96		76		40-140	23		50
Chrysene	91		73		40-140	22		50
Acenaphthylene	98		78		40-140	23		50
Anthracene	98		79		40-140	21		50
Benzo(ghi)perylene	101		81		40-140	22		50
Fluorene	93		75		40-140	21		50
Phenanthrene	94		76		40-140	21		50
Dibenzo(a,h)anthracene	98		79		40-140	21		50
Indeno(1,2,3-cd)pyrene	97		78		40-140	22		50
Pyrene	94		77		35-142	20		50
Aniline	70		56		40-140	22		50
Dibenzofuran	92		74		40-140	22		50
Pentachlorophenol	94		79		17-109	17		50
Phenol	**91**	Q	72		26-90	23		50
2-Methylphenol	98		78		30-130.	23		50

Lab Control Sample Analysis

Batch Quality Control

Project Name: SOIL TESTING: 75 EVANS STREET

Project Number: 24552

Lab Number: L2468369

Report Date: 12/03/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-06 Batch: WG2002286-2 WG2002286-3								
3-Methylphenol/4-Methylphenol	97		77		30-130	23		50
1,4-Dioxane	67		54		40-140	21		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	106		83		25-120
Phenol-d6	102		79		10-120
Nitrobenzene-d5	98		75		23-120
2-Fluorobiphenyl	90		72		30-120
2,4,6-Tribromophenol	94		74		10-136
4-Terphenyl-d14	94		75		18-120

PCBS

Project Name: SOIL TESTING: 75 EVANS STREET **Lab Number:** L2468369

Project Number: 24552 **Report Date:** 12/03/24

SAMPLE RESULTS

Lab ID: L2468369-01
Client ID: 20241120-BORE1-SAMPLE 1
Sample Location: 75 EVANS ST., HAMBURG, NY

Date Collected: 11/20/24 14:00
Date Received: 11/20/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 11/27/24 02:27
Analyst: MHG
Percent Solids: 86%

Extraction Method: EPA 3546
Extraction Date: 11/26/24 00:38
Cleanup Method: EPA 3665A
Cleanup Date: 11/26/24
Cleanup Method: EPA 3660B
Cleanup Date: 11/27/24

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	54.8	4.87	1	A
Aroclor 1221	ND		ug/kg	54.8	5.50	1	A
Aroclor 1232	ND		ug/kg	54.8	11.6	1	A
Aroclor 1242	ND		ug/kg	54.8	7.39	1	A
Aroclor 1248	ND		ug/kg	54.8	8.23	1	A
Aroclor 1254	ND		ug/kg	54.8	6.00	1	A
Aroclor 1260	ND		ug/kg	54.8	10.1	1	A
Aroclor 1262	ND		ug/kg	54.8	6.97	1	A
Aroclor 1268	ND		ug/kg	54.8	5.68	1	A
PCBs, Total	ND		ug/kg	54.8	4.87	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	69		30-150	A
Decachlorobiphenyl	77		30-150	A
2,4,5,6-Tetrachloro-m-xylene	67		30-150	B
Decachlorobiphenyl	66		30-150	B

Project Name: SOIL TESTING: 75 EVANS STREET **Lab Number:** L2468369

Project Number: 24552 **Report Date:** 12/03/24

SAMPLE RESULTS

Lab ID: L2468369-02
Client ID: 20241120-BORE1-SAMPLE 2
Sample Location: 75 EVANS ST., HAMBURG, NY

Date Collected: 11/20/24 14:00
Date Received: 11/20/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 11/27/24 02:35
Analyst: MHG
Percent Solids: 76%

Extraction Method: EPA 3546
Extraction Date: 11/26/24 00:38
Cleanup Method: EPA 3665A
Cleanup Date: 11/26/24
Cleanup Method: EPA 3660B
Cleanup Date: 11/27/24

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	63.7	5.66	1	A
Aroclor 1221	ND		ug/kg	63.7	6.38	1	A
Aroclor 1232	ND		ug/kg	63.7	13.5	1	A
Aroclor 1242	ND		ug/kg	63.7	8.59	1	A
Aroclor 1248	ND		ug/kg	63.7	9.56	1	A
Aroclor 1254	ND		ug/kg	63.7	6.97	1	A
Aroclor 1260	ND		ug/kg	63.7	11.8	1	A
Aroclor 1262	ND		ug/kg	63.7	8.09	1	A
Aroclor 1268	ND		ug/kg	63.7	6.60	1	A
PCBs, Total	ND		ug/kg	63.7	5.66	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	61		30-150	A
Decachlorobiphenyl	62		30-150	A
2,4,5,6-Tetrachloro-m-xylene	58		30-150	B
Decachlorobiphenyl	53		30-150	B

Project Name: SOIL TESTING: 75 EVANS STREET **Lab Number:** L2468369

Project Number: 24552 **Report Date:** 12/03/24

SAMPLE RESULTS

Lab ID: L2468369-03
Client ID: 20241120-BORE2-SAMPLE 3
Sample Location: 75 EVANS ST., HAMBURG, NY

Date Collected: 11/20/24 14:00
Date Received: 11/20/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 11/27/24 02:42
Analyst: MHG
Percent Solids: 86%

Extraction Method: EPA 3546
Extraction Date: 11/26/24 00:38
Cleanup Method: EPA 3665A
Cleanup Date: 11/26/24
Cleanup Method: EPA 3660B
Cleanup Date: 11/27/24

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	56.7	5.03	1	A
Aroclor 1221	ND		ug/kg	56.7	5.68	1	A
Aroclor 1232	ND		ug/kg	56.7	12.0	1	A
Aroclor 1242	ND		ug/kg	56.7	7.64	1	A
Aroclor 1248	ND		ug/kg	56.7	8.50	1	A
Aroclor 1254	ND		ug/kg	56.7	6.20	1	A
Aroclor 1260	ND		ug/kg	56.7	10.5	1	A
Aroclor 1262	ND		ug/kg	56.7	7.20	1	A
Aroclor 1268	ND		ug/kg	56.7	5.87	1	A
PCBs, Total	ND		ug/kg	56.7	5.03	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	67		30-150	A
Decachlorobiphenyl	70		30-150	A
2,4,5,6-Tetrachloro-m-xylene	64		30-150	B
Decachlorobiphenyl	60		30-150	B

Project Name: SOIL TESTING: 75 EVANS STREET **Lab Number:** L2468369

Project Number: 24552 **Report Date:** 12/03/24

SAMPLE RESULTS

Lab ID: L2468369-04
Client ID: 20241120-BORE2-SAMPLE 4
Sample Location: 75 EVANS ST., HAMBURG, NY

Date Collected: 11/20/24 14:00
Date Received: 11/20/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 11/27/24 02:50
Analyst: MHG
Percent Solids: 82%

Extraction Method: EPA 3546
Extraction Date: 11/26/24 00:38
Cleanup Method: EPA 3665A
Cleanup Date: 11/26/24
Cleanup Method: EPA 3660B
Cleanup Date: 11/27/24

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	55.9	4.96	1	A
Aroclor 1221	ND		ug/kg	55.9	5.60	1	A
Aroclor 1232	ND		ug/kg	55.9	11.8	1	A
Aroclor 1242	ND		ug/kg	55.9	7.53	1	A
Aroclor 1248	ND		ug/kg	55.9	8.38	1	A
Aroclor 1254	ND		ug/kg	55.9	6.11	1	A
Aroclor 1260	ND		ug/kg	55.9	10.3	1	A
Aroclor 1262	ND		ug/kg	55.9	7.10	1	A
Aroclor 1268	ND		ug/kg	55.9	5.79	1	A
PCBs, Total	ND		ug/kg	55.9	4.96	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	60		30-150	A
Decachlorobiphenyl	64		30-150	A
2,4,5,6-Tetrachloro-m-xylene	58		30-150	B
Decachlorobiphenyl	57		30-150	B

Project Name: SOIL TESTING: 75 EVANS STREET **Lab Number:** L2468369

Project Number: 24552 **Report Date:** 12/03/24

SAMPLE RESULTS

Lab ID: L2468369-05
Client ID: 20241120-BORE3-SAMPLE 5
Sample Location: 75 EVANS ST., HAMBURG, NY

Date Collected: 11/20/24 14:00
Date Received: 11/20/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 11/27/24 02:58
Analyst: MHG
Percent Solids: 92%

Extraction Method: EPA 3546
Extraction Date: 11/26/24 00:38
Cleanup Method: EPA 3665A
Cleanup Date: 11/26/24
Cleanup Method: EPA 3660B
Cleanup Date: 11/27/24

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	53.2	4.72	1	A
Aroclor 1221	ND		ug/kg	53.2	5.33	1	A
Aroclor 1232	ND		ug/kg	53.2	11.3	1	A
Aroclor 1242	ND		ug/kg	53.2	7.17	1	A
Aroclor 1248	ND		ug/kg	53.2	7.97	1	A
Aroclor 1254	ND		ug/kg	53.2	5.82	1	A
Aroclor 1260	ND		ug/kg	53.2	9.82	1	A
Aroclor 1262	ND		ug/kg	53.2	6.75	1	A
Aroclor 1268	ND		ug/kg	53.2	5.51	1	A
PCBs, Total	ND		ug/kg	53.2	4.72	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	56		30-150	A
Decachlorobiphenyl	57		30-150	A
2,4,5,6-Tetrachloro-m-xylene	54		30-150	B
Decachlorobiphenyl	49		30-150	B

Project Name: SOIL TESTING: 75 EVANS STREET **Lab Number:** L2468369

Project Number: 24552 **Report Date:** 12/03/24

SAMPLE RESULTS

Lab ID: L2468369-06
Client ID: 20241120-BORE3-SAMPLE 6
Sample Location: 75 EVANS ST., HAMBURG, NY

Date Collected: 11/20/24 14:00
Date Received: 11/20/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 11/27/24 03:05
Analyst: MHG
Percent Solids: 91%

Extraction Method: EPA 3546
Extraction Date: 11/26/24 00:38
Cleanup Method: EPA 3665A
Cleanup Date: 11/26/24
Cleanup Method: EPA 3660B
Cleanup Date: 11/27/24

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	51.1	4.54	1	A
Aroclor 1221	ND		ug/kg	51.1	5.12	1	A
Aroclor 1232	ND		ug/kg	51.1	10.8	1	A
Aroclor 1242	ND		ug/kg	51.1	6.89	1	A
Aroclor 1248	ND		ug/kg	51.1	7.67	1	A
Aroclor 1254	ND		ug/kg	51.1	5.59	1	A
Aroclor 1260	ND		ug/kg	51.1	9.45	1	A
Aroclor 1262	ND		ug/kg	51.1	6.49	1	A
Aroclor 1268	ND		ug/kg	51.1	5.30	1	A
PCBs, Total	ND		ug/kg	51.1	4.54	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	63		30-150	A
Decachlorobiphenyl	70		30-150	A
2,4,5,6-Tetrachloro-m-xylene	62		30-150	B
Decachlorobiphenyl	66		30-150	B

Project Name: SOIL TESTING: 75 EVANS STREET
Project Number: 24552
Lab Number: L2468369
Report Date: 12/03/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8082A
Analytical Date: 11/27/24 02:05
Analyst: MHG

Extraction Method: EPA 3546
Extraction Date: 11/26/24 00:38
Cleanup Method: EPA 3665A
Cleanup Date: 11/26/24
Cleanup Method: EPA 3660B
Cleanup Date: 11/27/24

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 01-06 Batch: WG2002291-1						
Aroclor 1016	ND		ug/kg	49.7	4.41	A
Aroclor 1221	ND		ug/kg	49.7	4.98	A
Aroclor 1232	ND		ug/kg	49.7	10.5	A
Aroclor 1242	ND		ug/kg	49.7	6.70	A
Aroclor 1248	ND		ug/kg	49.7	7.46	A
Aroclor 1262	ND		ug/kg	49.7	6.31	A
Aroclor 1254	ND		ug/kg	49.7	5.44	B
Aroclor 1260	ND		ug/kg	49.7	9.18	B
Aroclor 1268	ND		ug/kg	49.7	5.15	B
PCBs, Total	ND		ug/kg	49.7	4.41	B

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	80		30-150	A
Decachlorobiphenyl	91		30-150	A
2,4,5,6-Tetrachloro-m-xylene	75		30-150	B
Decachlorobiphenyl	78		30-150	B

Lab Control Sample Analysis

Batch Quality Control

Project Name: SOIL TESTING: 75 EVANS STREET

Project Number: 24552

Lab Number: L2468369

Report Date: 12/03/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01-06 Batch: WG2002291-2 WG2002291-3									
Aroclor 1016	85		86		40-140	1		50	A
Aroclor 1260	86		86		40-140	0		50	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	76		77		30-150	A
Decachlorobiphenyl	86		88		30-150	A
2,4,5,6-Tetrachloro-m-xylene	71		72		30-150	B
Decachlorobiphenyl	71		73		30-150	B

PESTICIDES

Project Name: SOIL TESTING: 75 EVANS STREET **Lab Number:** L2468369

Project Number: 24552 **Report Date:** 12/03/24

SAMPLE RESULTS

Lab ID: L2468369-01
Client ID: 20241120-BORE1-SAMPLE 1
Sample Location: 75 EVANS ST., HAMBURG, NY

Date Collected: 11/20/24 14:00
Date Received: 11/20/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 11/27/24 10:37
Analyst: PEG
Percent Solids: 86%

Extraction Method: EPA 3546
Extraction Date: 11/25/24 23:59
Cleanup Method: EPA 3620B
Cleanup Date: 11/27/24
Cleanup Method: EPA 3660B
Cleanup Date: 11/27/24

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.82	0.356	1	A
Lindane	ND		ug/kg	0.756	0.338	1	A
Alpha-BHC	ND		ug/kg	0.756	0.215	1	A
Beta-BHC	ND		ug/kg	1.82	0.688	1	A
Heptachlor	ND		ug/kg	0.908	0.407	1	A
Aldrin	ND		ug/kg	1.82	0.639	1	A
Endrin	ND		ug/kg	0.756	0.310	1	A
Dieldrin	ND		ug/kg	1.13	0.567	1	A
4,4'-DDE	ND		ug/kg	1.82	0.420	1	A
4,4'-DDD	ND		ug/kg	1.82	0.648	1	A
4,4'-DDT	ND		ug/kg	1.82	1.46	1	A
Endosulfan I	ND		ug/kg	1.82	0.429	1	A
Endosulfan II	ND		ug/kg	1.82	0.607	1	A
Endosulfan sulfate	ND		ug/kg	0.756	0.360	1	A
cis-Chlordane	ND		ug/kg	2.27	0.632	1	A
Chlordane	ND		ug/kg	15.1	6.01	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	77		30-150	A
Decachlorobiphenyl	73		30-150	A
2,4,5,6-Tetrachloro-m-xylene	77		30-150	B
Decachlorobiphenyl	79		30-150	B

Project Name: SOIL TESTING: 75 EVANS STREET
Lab Number: L2468369
Project Number: 24552
Report Date: 12/03/24

SAMPLE RESULTS

Lab ID: L2468369-01
Client ID: 20241120-BORE1-SAMPLE 1
Sample Location: 75 EVANS ST., HAMBURG, NY

Date Collected: 11/20/24 14:00
Date Received: 11/20/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8151A
Analytical Date: 11/26/24 20:24
Analyst: AKM
Percent Solids: 86%
Methylation Date: 11/26/24 05:41

Extraction Method: EPA 8151A
Extraction Date: 11/25/24 15:09

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Chlorinated Herbicides by GC - Westborough Lab							
2,4,5-TP (Silvex)	ND		ug/kg	191	5.07	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
DCAA	78		30-150	A
DCAA	73		30-150	B

Project Name: SOIL TESTING: 75 EVANS STREET **Lab Number:** L2468369

Project Number: 24552 **Report Date:** 12/03/24

SAMPLE RESULTS

Lab ID: L2468369-02
Client ID: 20241120-BORE1-SAMPLE 2
Sample Location: 75 EVANS ST., HAMBURG, NY

Date Collected: 11/20/24 14:00
Date Received: 11/20/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 11/27/24 10:50
Analyst: PEG
Percent Solids: 76%

Extraction Method: EPA 3546
Extraction Date: 11/25/24 23:59
Cleanup Method: EPA 3620B
Cleanup Date: 11/27/24
Cleanup Method: EPA 3660B
Cleanup Date: 11/27/24

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	2.06	0.404	1	A
Lindane	ND		ug/kg	0.859	0.384	1	A
Alpha-BHC	ND		ug/kg	0.859	0.244	1	A
Beta-BHC	ND		ug/kg	2.06	0.782	1	A
Heptachlor	ND		ug/kg	1.03	0.462	1	A
Aldrin	ND		ug/kg	2.06	0.726	1	A
Endrin	ND		ug/kg	0.859	0.352	1	A
Dieldrin	ND		ug/kg	1.29	0.644	1	A
4,4'-DDE	ND		ug/kg	2.06	0.477	1	A
4,4'-DDD	ND		ug/kg	2.06	0.735	1	A
4,4'-DDT	ND		ug/kg	2.06	1.66	1	A
Endosulfan I	ND		ug/kg	2.06	0.487	1	A
Endosulfan II	ND		ug/kg	2.06	0.689	1	A
Endosulfan sulfate	ND		ug/kg	0.859	0.409	1	A
cis-Chlordane	ND		ug/kg	2.58	0.718	1	A
Chlordane	ND		ug/kg	17.2	6.83	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	77		30-150	A
Decachlorobiphenyl	76		30-150	A
2,4,5,6-Tetrachloro-m-xylene	76		30-150	B
Decachlorobiphenyl	80		30-150	B

Project Name: SOIL TESTING: 75 EVANS STREET
Lab Number: L2468369
Project Number: 24552
Report Date: 12/03/24

SAMPLE RESULTS

Lab ID: L2468369-02
Client ID: 20241120-BORE1-SAMPLE 2
Sample Location: 75 EVANS ST., HAMBURG, NY
Date Collected: 11/20/24 14:00
Date Received: 11/20/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8151A
Analytical Date: 11/26/24 20:42
Analyst: AKM
Percent Solids: 76%
Methylation Date: 11/26/24 08:15
Extraction Method: EPA 8151A
Extraction Date: 11/25/24 15:09

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Chlorinated Herbicides by GC - Westborough Lab							
2,4,5-TP (Silvex)	ND		ug/kg	218	5.80	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
DCAA	72		30-150	A
DCAA	66		30-150	B

Project Name: SOIL TESTING: 75 EVANS STREET **Lab Number:** L2468369

Project Number: 24552 **Report Date:** 12/03/24

SAMPLE RESULTS

Lab ID: L2468369-03
Client ID: 20241120-BORE2-SAMPLE 3
Sample Location: 75 EVANS ST., HAMBURG, NY

Date Collected: 11/20/24 14:00
Date Received: 11/20/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 11/27/24 11:02
Analyst: PEG
Percent Solids: 86%

Extraction Method: EPA 3546
Extraction Date: 11/25/24 23:59
Cleanup Method: EPA 3620B
Cleanup Date: 11/27/24
Cleanup Method: EPA 3660B
Cleanup Date: 11/27/24

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.82	0.356	1	A
Lindane	ND		ug/kg	0.758	0.339	1	A
Alpha-BHC	ND		ug/kg	0.758	0.215	1	A
Beta-BHC	ND		ug/kg	1.82	0.690	1	A
Heptachlor	ND		ug/kg	0.910	0.408	1	A
Aldrin	ND		ug/kg	1.82	0.641	1	A
Endrin	ND		ug/kg	0.758	0.311	1	A
Dieldrin	ND		ug/kg	1.14	0.569	1	A
4,4'-DDE	ND		ug/kg	1.82	0.421	1	A
4,4'-DDD	ND		ug/kg	1.82	0.649	1	A
4,4'-DDT	ND		ug/kg	1.82	1.46	1	A
Endosulfan I	ND		ug/kg	1.82	0.430	1	A
Endosulfan II	ND		ug/kg	1.82	0.608	1	A
Endosulfan sulfate	ND		ug/kg	0.758	0.361	1	A
cis-Chlordane	ND		ug/kg	2.28	0.634	1	A
Chlordane	ND		ug/kg	15.2	6.03	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	81		30-150	A
Decachlorobiphenyl	77		30-150	A
2,4,5,6-Tetrachloro-m-xylene	80		30-150	B
Decachlorobiphenyl	80		30-150	B

Project Name: SOIL TESTING: 75 EVANS STREET
Lab Number: L2468369
Project Number: 24552
Report Date: 12/03/24

SAMPLE RESULTS

Lab ID: L2468369-03
Client ID: 20241120-BORE2-SAMPLE 3
Sample Location: 75 EVANS ST., HAMBURG, NY

Date Collected: 11/20/24 14:00
Date Received: 11/20/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8151A
Analytical Date: 11/26/24 21:01
Analyst: AKM
Percent Solids: 86%
Methylation Date: 11/26/24 08:15

Extraction Method: EPA 8151A
Extraction Date: 11/25/24 15:09

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Chlorinated Herbicides by GC - Westborough Lab							
2,4,5-TP (Silvex)	ND		ug/kg	190	5.04	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
DCAA	74		30-150	A
DCAA	72		30-150	B

Project Name: SOIL TESTING: 75 EVANS STREET
Lab Number: L2468369
Project Number: 24552
Report Date: 12/03/24

SAMPLE RESULTS

Lab ID: L2468369-04
Client ID: 20241120-BORE2-SAMPLE 4
Sample Location: 75 EVANS ST., HAMBURG, NY
Date Collected: 11/20/24 14:00
Date Received: 11/20/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 11/27/24 11:15
Analyst: PEG
Percent Solids: 82%

Extraction Method: EPA 3546
Extraction Date: 11/25/24 23:59
Cleanup Method: EPA 3620B
Cleanup Date: 11/27/24
Cleanup Method: EPA 3660B
Cleanup Date: 11/27/24

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.83	0.359	1	A
Lindane	ND		ug/kg	0.763	0.341	1	A
Alpha-BHC	ND		ug/kg	0.763	0.217	1	A
Beta-BHC	ND		ug/kg	1.83	0.694	1	A
Heptachlor	ND		ug/kg	0.916	0.411	1	A
Aldrin	ND		ug/kg	1.83	0.645	1	A
Endrin	ND		ug/kg	0.763	0.313	1	A
Dieldrin	ND		ug/kg	1.14	0.572	1	A
4,4'-DDE	ND		ug/kg	1.83	0.424	1	A
4,4'-DDD	ND		ug/kg	1.83	0.653	1	A
4,4'-DDT	ND		ug/kg	1.83	1.47	1	A
Endosulfan I	ND		ug/kg	1.83	0.433	1	A
Endosulfan II	ND		ug/kg	1.83	0.612	1	A
Endosulfan sulfate	ND		ug/kg	0.763	0.363	1	A
cis-Chlordane	ND		ug/kg	2.29	0.638	1	A
Chlordane	ND		ug/kg	15.3	6.07	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	**439**	Q	30-150	A
Decachlorobiphenyl	74		30-150	A
2,4,5,6-Tetrachloro-m-xylene	78		30-150	B
Decachlorobiphenyl	77		30-150	B

Project Name: SOIL TESTING: 75 EVANS STREET
Lab Number: L2468369
Project Number: 24552
Report Date: 12/03/24

SAMPLE RESULTS

Lab ID: L2468369-04
Client ID: 20241120-BORE2-SAMPLE 4
Sample Location: 75 EVANS ST., HAMBURG, NY

Date Collected: 11/20/24 14:00
Date Received: 11/20/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8151A
Analytical Date: 11/26/24 21:19
Analyst: AKM
Percent Solids: 82%
Methylation Date: 11/26/24 08:15

Extraction Method: EPA 8151A
Extraction Date: 11/25/24 15:09

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Chlorinated Herbicides by GC - Westborough Lab							
2,4,5-TP (Silvex)	ND		ug/kg	201	5.34	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
DCAA	72		30-150	A
DCAA	67		30-150	B

Project Name: SOIL TESTING: 75 EVANS STREET **Lab Number:** L2468369

Project Number: 24552 **Report Date:** 12/03/24

SAMPLE RESULTS

Lab ID: L2468369-05
Client ID: 20241120-BORE3-SAMPLE 5
Sample Location: 75 EVANS ST., HAMBURG, NY

Date Collected: 11/20/24 14:00
Date Received: 11/20/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 11/27/24 11:27
Analyst: PEG
Percent Solids: 92%

Extraction Method: EPA 3546
Extraction Date: 11/25/24 23:59
Cleanup Method: EPA 3620B
Cleanup Date: 11/27/24
Cleanup Method: EPA 3660B
Cleanup Date: 11/27/24

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.70	0.333	1	A
Lindane	ND		ug/kg	0.709	0.317	1	A
Alpha-BHC	ND		ug/kg	0.709	0.201	1	A
Beta-BHC	ND		ug/kg	1.70	0.645	1	A
Heptachlor	ND		ug/kg	0.851	0.381	1	A
Aldrin	ND		ug/kg	1.70	0.599	1	A
Endrin	ND		ug/kg	0.709	0.291	1	A
Dieldrin	ND		ug/kg	1.06	0.532	1	A
4,4'-DDE	ND		ug/kg	1.70	0.393	1	A
4,4'-DDD	ND		ug/kg	1.70	0.607	1	A
4,4'-DDT	ND		ug/kg	1.70	1.37	1	A
Endosulfan I	ND		ug/kg	1.70	0.402	1	A
Endosulfan II	ND		ug/kg	1.70	0.568	1	A
Endosulfan sulfate	ND		ug/kg	0.709	0.337	1	A
cis-Chlordane	ND		ug/kg	2.13	0.593	1	A
Chlordane	ND		ug/kg	14.2	5.64	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	90		30-150	A
Decachlorobiphenyl	74		30-150	A
2,4,5,6-Tetrachloro-m-xylene	88		30-150	B
Decachlorobiphenyl	85		30-150	B

Project Name: SOIL TESTING: 75 EVANS STREET
Lab Number: L2468369
Project Number: 24552
Report Date: 12/03/24

SAMPLE RESULTS

Lab ID: L2468369-05
Client ID: 20241120-BORE3-SAMPLE 5
Sample Location: 75 EVANS ST., HAMBURG, NY

Date Collected: 11/20/24 14:00
Date Received: 11/20/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8151A
Analytical Date: 11/26/24 21:38
Analyst: AKM
Percent Solids: 92%
Methylation Date: 11/26/24 08:15

Extraction Method: EPA 8151A
Extraction Date: 11/25/24 15:09

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Chlorinated Herbicides by GC - Westborough Lab							
2,4,5-TP (Silvex)	ND		ug/kg	177	4.72	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
DCAA	69		30-150	A
DCAA	62		30-150	B

Project Name: SOIL TESTING: 75 EVANS STREET **Lab Number:** L2468369

Project Number: 24552 **Report Date:** 12/03/24

SAMPLE RESULTS

Lab ID: L2468369-06
Client ID: 20241120-BORE3-SAMPLE 6
Sample Location: 75 EVANS ST., HAMBURG, NY

Date Collected: 11/20/24 14:00
Date Received: 11/20/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 11/27/24 11:40
Analyst: PEG
Percent Solids: 91%

Extraction Method: EPA 3546
Extraction Date: 11/25/24 23:59
Cleanup Method: EPA 3620B
Cleanup Date: 11/27/24
Cleanup Method: EPA 3660B
Cleanup Date: 11/27/24

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.71	0.335	1	A
Lindane	ND		ug/kg	0.713	0.319	1	A
Alpha-BHC	ND		ug/kg	0.713	0.202	1	A
Beta-BHC	ND		ug/kg	1.71	0.649	1	A
Heptachlor	ND		ug/kg	0.855	0.383	1	A
Aldrin	ND		ug/kg	1.71	0.602	1	A
Endrin	ND		ug/kg	0.713	0.292	1	A
Dieldrin	ND		ug/kg	1.07	0.534	1	A
4,4'-DDE	ND		ug/kg	1.71	0.396	1	A
4,4'-DDD	ND		ug/kg	1.71	0.610	1	A
4,4'-DDT	ND		ug/kg	1.71	1.38	1	A
Endosulfan I	ND		ug/kg	1.71	0.404	1	A
Endosulfan II	ND		ug/kg	1.71	0.572	1	A
Endosulfan sulfate	ND		ug/kg	0.713	0.339	1	A
cis-Chlordane	ND		ug/kg	2.14	0.596	1	A
Chlordane	ND		ug/kg	14.2	5.67	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	83		30-150	A
Decachlorobiphenyl	66		30-150	A
2,4,5,6-Tetrachloro-m-xylene	79		30-150	B
Decachlorobiphenyl	76		30-150	B

Project Name: SOIL TESTING: 75 EVANS STREET
Lab Number: L2468369
Project Number: 24552
Report Date: 12/03/24

SAMPLE RESULTS

Lab ID: L2468369-06
Client ID: 20241120-BORE3-SAMPLE 6
Sample Location: 75 EVANS ST., HAMBURG, NY

Date Collected: 11/20/24 14:00
Date Received: 11/20/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8151A
Analytical Date: 11/26/24 21:57
Analyst: AKM
Percent Solids: 91%
Methylation Date: 11/26/24 08:15

Extraction Method: EPA 8151A
Extraction Date: 11/25/24 15:09

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Chlorinated Herbicides by GC - Westborough Lab							
2,4,5-TP (Silvex)	ND		ug/kg	182	4.83	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
DCAA	75		30-150	A
DCAA	69		30-150	B

Project Name: SOIL TESTING: 75 EVANS STREET
Project Number: 24552
Lab Number: L2468369
Report Date: 12/03/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8081B
Analytical Date: 11/26/24 23:11
Analyst: EMR

Extraction Method: EPA 3546
Extraction Date: 11/25/24 13:56
Cleanup Method: EPA 3620B
Cleanup Date: 11/26/24
Cleanup Method: EPA 3660B
Cleanup Date: 11/26/24

Parameter	Result	Qualifier	Units	RL	MDL	Column
Organochlorine Pesticides by GC - Westborough Lab for sample(s): 01-06 Batch: WG2002082-1						
Delta-BHC	ND		ug/kg	1.58	0.309	A
Lindane	ND		ug/kg	0.657	0.294	A
Alpha-BHC	ND		ug/kg	0.657	0.187	A
Beta-BHC	ND		ug/kg	1.58	0.598	A
Heptachlor	ND		ug/kg	0.789	0.354	A
Aldrin	ND		ug/kg	1.58	0.556	A
Endrin	ND		ug/kg	0.657	0.270	A
Dieldrin	ND		ug/kg	0.986	0.493	A
4,4'-DDE	ND		ug/kg	1.58	0.365	A
4,4'-DDD	ND		ug/kg	1.58	0.563	A
4,4'-DDT	ND		ug/kg	1.58	1.27	A
Endosulfan I	ND		ug/kg	1.58	0.373	A
Endosulfan II	ND		ug/kg	1.58	0.527	A
Endosulfan sulfate	ND		ug/kg	0.657	0.313	A
cis-Chlordane	ND		ug/kg	1.97	0.550	A
Chlordane	ND		ug/kg	13.1	5.23	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	59		30-150	A
Decachlorobiphenyl	50		30-150	A
2,4,5,6-Tetrachloro-m-xylene	63		30-150	B
Decachlorobiphenyl	81		30-150	B

Project Name: SOIL TESTING: 75 EVANS STREET
Project Number: 24552
Lab Number: L2468369
Report Date: 12/03/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8151A
Analytical Date: 11/26/24 19:28
Analyst: AKM

Extraction Method: EPA 8151A
Extraction Date: 11/25/24 15:09

Methylation Date: 11/26/24 05:41

Parameter	Result	Qualifier	Units	RL	MDL	Column
Chlorinated Herbicides by GC - Westborough Lab for sample(s): 01-06 Batch: WG2002125-1						
2,4,5-TP (Silvex)	ND		ug/kg	162	4.32	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
DCAA	74		30-150	A
DCAA	68		30-150	B

Lab Control Sample Analysis

Batch Quality Control

Project Name: SOIL TESTING: 75 EVANS STREET

Project Number: 24552

Lab Number: L2468369

Report Date: 12/03/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 01-06 Batch: WG2002082-2 WG2002082-3									
Delta-BHC	69		72		30-150	4		30	A
Lindane	68		70		30-150	3		30	A
Alpha-BHC	71		73		30-150	3		30	A
Beta-BHC	81		85		30-150	5		30	A
Heptachlor	67		68		30-150	1		30	A
Aldrin	72		73		30-150	1		30	A
Endrin	72		72		30-150	0		30	A
Dieldrin	74		73		30-150	1		30	A
4,4'-DDE	70		70		30-150	0		30	A
4,4'-DDD	90		90		30-150	0		30	A
4,4'-DDT	87		84		30-150	4		30	A
Endosulfan I	80		82		30-150	2		30	A
Endosulfan II	75		74		30-150	1		30	A
Endosulfan sulfate	67		66		30-150	2		30	A
cis-Chlordane	80		84		30-150	5		30	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	63		65		30-150	A
Decachlorobiphenyl	62		70		30-150	A
2,4,5,6-Tetrachloro-m-xylene	69		71		30-150	B
Decachlorobiphenyl	92		86		30-150	B

Lab Control Sample Analysis

Batch Quality Control

Project Name: SOIL TESTING: 75 EVANS STREET

Project Number: 24552

Lab Number: L2468369

Report Date: 12/03/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Chlorinated Herbicides by GC - Westborough Lab Associated sample(s): 01-06 Batch: WG2002125-2 WG2002125-3									
2,4,5-TP (Silvex)	72		72		30-150	0		30	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
DCAA	77		78		30-150	A
DCAA	81		79		30-150	B

METALS

Project Name: SOIL TESTING: 75 EVANS STREET **Lab Number:** L2468369

Project Number: 24552 **Report Date:** 12/03/24

SAMPLE RESULTS

Lab ID: L2468369-01 Date Collected: 11/20/24 14:00

Client ID: 20241120-BORE1-SAMPLE 1 Date Received: 11/20/24

Sample Location: 75 EVANS ST., HAMBURG, NY Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	13.3		mg/kg	0.914	0.190	2	11/27/24 10:11	11/27/24 16:24	EPA 3050B	1,6010D	DMC
Barium, Total	142		mg/kg	0.914	0.159	2	11/27/24 10:11	11/27/24 16:24	EPA 3050B	1,6010D	DMC
Beryllium, Total	0.529		mg/kg	0.457	0.030	2	11/27/24 10:11	11/27/24 16:24	EPA 3050B	1,6010D	DMC
Cadmium, Total	0.145	J	mg/kg	0.914	0.090	2	11/27/24 10:11	11/27/24 16:24	EPA 3050B	1,6010D	DMC
Chromium, Total	11.2		mg/kg	0.914	0.088	2	11/27/24 10:11	11/27/24 16:24	EPA 3050B	1,6010D	DMC
Copper, Total	52.4		mg/kg	0.914	0.236	2	11/27/24 10:11	11/27/24 16:24	EPA 3050B	1,6010D	DMC
Lead, Total	38.2		mg/kg	4.57	0.245	2	11/27/24 10:11	11/27/24 16:24	EPA 3050B	1,6010D	DMC
Manganese, Total	182		mg/kg	0.914	0.145	2	11/27/24 10:11	11/27/24 16:24	EPA 3050B	1,6010D	DMC
Mercury, Total	0.084	J	mg/kg	0.084	0.055	1	11/27/24 11:10	11/29/24 16:52	EPA 7471B	1,7471B	MJR
Nickel, Total	13.8		mg/kg	2.28	0.221	2	11/27/24 10:11	11/27/24 16:24	EPA 3050B	1,6010D	DMC
Selenium, Total	1.19	J	mg/kg	1.83	0.236	2	11/27/24 10:11	11/27/24 16:24	EPA 3050B	1,6010D	DMC
Silver, Total	ND		mg/kg	0.457	0.259	2	11/27/24 10:11	11/27/24 16:24	EPA 3050B	1,6010D	DMC
Zinc, Total	57.4		mg/kg	4.57	0.268	2	11/27/24 10:11	11/27/24 16:24	EPA 3050B	1,6010D	DMC
General Chemistry - Mansfield Lab											
Chromium, Trivalent	11.2		mg/kg	0.926	0.185	1		11/27/24 16:24	NA	107,-	

Project Name: SOIL TESTING: 75 EVANS STREET
Lab Number: L2468369
Project Number: 24552
Report Date: 12/03/24

SAMPLE RESULTS

Lab ID: L2468369-02
Client ID: 20241120-BORE1-SAMPLE 2
Sample Location: 75 EVANS ST., HAMBURG, NY
Date Collected: 11/20/24 14:00
Date Received: 11/20/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 76%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	3.95		mg/kg	0.990	0.206	2	11/27/24 10:11	11/27/24 16:27	EPA 3050B	1,6010D	DMC
Barium, Total	26.3		mg/kg	0.990	0.172	2	11/27/24 10:11	11/27/24 16:27	EPA 3050B	1,6010D	DMC
Beryllium, Total	0.228	J	mg/kg	0.495	0.033	2	11/27/24 10:11	11/27/24 16:27	EPA 3050B	1,6010D	DMC
Cadmium, Total	ND		mg/kg	0.990	0.097	2	11/27/24 10:11	11/27/24 16:27	EPA 3050B	1,6010D	DMC
Chromium, Total	6.93		mg/kg	0.990	0.095	2	11/27/24 10:11	11/27/24 16:27	EPA 3050B	1,6010D	DMC
Copper, Total	21.3		mg/kg	0.990	0.256	2	11/27/24 10:11	11/27/24 16:27	EPA 3050B	1,6010D	DMC
Lead, Total	9.21		mg/kg	4.95	0.265	2	11/27/24 10:11	11/27/24 16:27	EPA 3050B	1,6010D	DMC
Manganese, Total	144		mg/kg	0.990	0.157	2	11/27/24 10:11	11/27/24 16:27	EPA 3050B	1,6010D	DMC
Mercury, Total	ND		mg/kg	0.095	0.062	1	11/27/24 11:10	11/29/24 17:08	EPA 7471B	1,7471B	MJR
Nickel, Total	13.6		mg/kg	2.48	0.240	2	11/27/24 10:11	11/27/24 16:27	EPA 3050B	1,6010D	DMC
Selenium, Total	1.92	J	mg/kg	1.98	0.256	2	11/27/24 10:11	11/27/24 16:27	EPA 3050B	1,6010D	DMC
Silver, Total	ND		mg/kg	0.495	0.280	2	11/27/24 10:11	11/27/24 16:27	EPA 3050B	1,6010D	DMC
Zinc, Total	47.5		mg/kg	4.95	0.290	2	11/27/24 10:11	11/27/24 16:27	EPA 3050B	1,6010D	DMC
General Chemistry - Mansfield Lab											
Chromium, Trivalent	6.93		mg/kg	1.05	0.210	1		11/27/24 16:27	NA	107,-	

Project Name: SOIL TESTING: 75 EVANS STREET **Lab Number:** L2468369

Project Number: 24552 **Report Date:** 12/03/24

SAMPLE RESULTS

Lab ID: L2468369-03 Date Collected: 11/20/24 14:00

Client ID: 20241120-BORE2-SAMPLE 3 Date Received: 11/20/24

Sample Location: 75 EVANS ST., HAMBURG, NY Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	5.32		mg/kg	0.914	0.190	2	11/27/24 10:11	11/27/24 16:31	EPA 3050B	1,6010D	DMC
Barium, Total	16.7		mg/kg	0.914	0.159	2	11/27/24 10:11	11/27/24 16:31	EPA 3050B	1,6010D	DMC
Beryllium, Total	0.568		mg/kg	0.457	0.030	2	11/27/24 10:11	11/27/24 16:31	EPA 3050B	1,6010D	DMC
Cadmium, Total	ND		mg/kg	0.914	0.090	2	11/27/24 10:11	11/27/24 16:31	EPA 3050B	1,6010D	DMC
Chromium, Total	24.4		mg/kg	0.914	0.088	2	11/27/24 10:11	11/27/24 16:31	EPA 3050B	1,6010D	DMC
Copper, Total	23.8		mg/kg	0.914	0.236	2	11/27/24 10:11	11/27/24 16:31	EPA 3050B	1,6010D	DMC
Lead, Total	7.15		mg/kg	4.57	0.245	2	11/27/24 10:11	11/27/24 16:31	EPA 3050B	1,6010D	DMC
Manganese, Total	349		mg/kg	0.914	0.145	2	11/27/24 10:11	11/27/24 16:31	EPA 3050B	1,6010D	DMC
Mercury, Total	ND		mg/kg	0.088	0.057	1	11/27/24 11:10	11/29/24 17:11	EPA 7471B	1,7471B	MJR
Nickel, Total	41.6		mg/kg	2.28	0.221	2	11/27/24 10:11	11/27/24 16:31	EPA 3050B	1,6010D	DMC
Selenium, Total	ND		mg/kg	1.83	0.236	2	11/27/24 10:11	11/27/24 16:31	EPA 3050B	1,6010D	DMC
Silver, Total	ND		mg/kg	0.457	0.259	2	11/27/24 10:11	11/27/24 16:31	EPA 3050B	1,6010D	DMC
Zinc, Total	69.2		mg/kg	4.57	0.268	2	11/27/24 10:11	11/27/24 16:31	EPA 3050B	1,6010D	DMC
General Chemistry - Mansfield Lab											
Chromium, Trivalent	24.4		mg/kg	0.930	0.186	1		11/27/24 16:31	NA	107,-	

Project Name: SOIL TESTING: 75 EVANS STREET **Lab Number:** L2468369

Project Number: 24552 **Report Date:** 12/03/24

SAMPLE RESULTS

Lab ID: L2468369-04 Date Collected: 11/20/24 14:00

Client ID: 20241120-BORE2-SAMPLE 4 Date Received: 11/20/24

Sample Location: 75 EVANS ST., HAMBURG, NY Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	5.58		mg/kg	0.959	0.199	2	11/27/24 10:11	11/27/24 17:32	EPA 3050B	1,6010D	DMC
Barium, Total	18.8		mg/kg	0.959	0.167	2	11/27/24 10:11	11/27/24 17:32	EPA 3050B	1,6010D	DMC
Beryllium, Total	0.188	J	mg/kg	0.479	0.032	2	11/27/24 10:11	11/27/24 17:32	EPA 3050B	1,6010D	DMC
Cadmium, Total	ND		mg/kg	0.959	0.094	2	11/27/24 10:11	11/27/24 17:32	EPA 3050B	1,6010D	DMC
Chromium, Total	6.14		mg/kg	0.959	0.092	2	11/27/24 10:11	11/27/24 17:32	EPA 3050B	1,6010D	DMC
Copper, Total	14.7		mg/kg	0.959	0.247	2	11/27/24 10:11	11/27/24 17:32	EPA 3050B	1,6010D	DMC
Lead, Total	6.46		mg/kg	4.79	0.257	2	11/27/24 10:11	11/27/24 17:32	EPA 3050B	1,6010D	DMC
Manganese, Total	143		mg/kg	0.959	0.152	2	11/27/24 10:11	11/27/24 17:32	EPA 3050B	1,6010D	DMC
Mercury, Total	ND		mg/kg	0.10	0.065	1	11/27/24 11:10	11/29/24 17:15	EPA 7471B	1,7471B	MJR
Nickel, Total	12.0		mg/kg	2.40	0.232	2	11/27/24 10:11	11/27/24 17:32	EPA 3050B	1,6010D	DMC
Selenium, Total	ND		mg/kg	1.92	0.247	2	11/27/24 10:11	11/27/24 17:32	EPA 3050B	1,6010D	DMC
Silver, Total	ND		mg/kg	0.479	0.271	2	11/27/24 10:11	11/27/24 17:32	EPA 3050B	1,6010D	DMC
Zinc, Total	40.8		mg/kg	4.79	0.281	2	11/27/24 10:11	11/27/24 17:32	EPA 3050B	1,6010D	DMC
General Chemistry - Mansfield Lab											
Chromium, Trivalent	6.14		mg/kg	0.971	0.194	1		11/27/24 17:32	NA	107,-	

Project Name: SOIL TESTING: 75 EVANS STREET **Lab Number:** L2468369

Project Number: 24552 **Report Date:** 12/03/24

SAMPLE RESULTS

Lab ID: L2468369-05 Date Collected: 11/20/24 14:00

Client ID: 20241120-BORE3-SAMPLE 5 Date Received: 11/20/24

Sample Location: 75 EVANS ST., HAMBURG, NY Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 92%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	8.09		mg/kg	0.847	0.176	2	11/27/24 10:11	11/27/24 17:35	EPA 3050B	1,6010D	DMC
Barium, Total	38.9		mg/kg	0.847	0.147	2	11/27/24 10:11	11/27/24 17:35	EPA 3050B	1,6010D	DMC
Beryllium, Total	0.450		mg/kg	0.424	0.028	2	11/27/24 10:11	11/27/24 17:35	EPA 3050B	1,6010D	DMC
Cadmium, Total	ND		mg/kg	0.847	0.083	2	11/27/24 10:11	11/27/24 17:35	EPA 3050B	1,6010D	DMC
Chromium, Total	18.6		mg/kg	0.847	0.081	2	11/27/24 10:11	11/27/24 17:35	EPA 3050B	1,6010D	DMC
Copper, Total	26.7		mg/kg	0.847	0.219	2	11/27/24 10:11	11/27/24 17:35	EPA 3050B	1,6010D	DMC
Lead, Total	15.9		mg/kg	4.24	0.227	2	11/27/24 10:11	11/27/24 17:35	EPA 3050B	1,6010D	DMC
Manganese, Total	229		mg/kg	0.847	0.135	2	11/27/24 10:11	11/27/24 17:35	EPA 3050B	1,6010D	DMC
Mercury, Total	ND		mg/kg	0.078	0.051	1	11/27/24 11:10	11/29/24 17:18	EPA 7471B	1,7471B	MJR
Nickel, Total	27.5		mg/kg	2.12	0.205	2	11/27/24 10:11	11/27/24 17:35	EPA 3050B	1,6010D	DMC
Selenium, Total	ND		mg/kg	1.69	0.219	2	11/27/24 10:11	11/27/24 17:35	EPA 3050B	1,6010D	DMC
Silver, Total	ND		mg/kg	0.424	0.240	2	11/27/24 10:11	11/27/24 17:35	EPA 3050B	1,6010D	DMC
Zinc, Total	78.4		mg/kg	4.24	0.248	2	11/27/24 10:11	11/27/24 17:35	EPA 3050B	1,6010D	DMC
General Chemistry - Mansfield Lab											
Chromium, Trivalent	18.6		mg/kg	0.868	0.174	1		11/27/24 17:35	NA	107,-	

Project Name: SOIL TESTING: 75 EVANS STREET
Lab Number: L2468369
Project Number: 24552
Report Date: 12/03/24

SAMPLE RESULTS

Lab ID: L2468369-06
Client ID: 20241120-BORE3-SAMPLE 6
Sample Location: 75 EVANS ST., HAMBURG, NY
Date Collected: 11/20/24 14:00
Date Received: 11/20/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	10.4		mg/kg	0.854	0.178	2	11/27/24 10:11	11/27/24 17:39	EPA 3050B	1,6010D	DMC
Barium, Total	41.5		mg/kg	0.854	0.149	2	11/27/24 10:11	11/27/24 17:39	EPA 3050B	1,6010D	DMC
Beryllium, Total	0.249	J	mg/kg	0.427	0.028	2	11/27/24 10:11	11/27/24 17:39	EPA 3050B	1,6010D	DMC
Cadmium, Total	0.513	J	mg/kg	0.854	0.084	2	11/27/24 10:11	11/27/24 17:39	EPA 3050B	1,6010D	DMC
Chromium, Total	9.02		mg/kg	0.854	0.082	2	11/27/24 10:11	11/27/24 17:39	EPA 3050B	1,6010D	DMC
Copper, Total	25.3		mg/kg	0.854	0.220	2	11/27/24 10:11	11/27/24 17:39	EPA 3050B	1,6010D	DMC
Lead, Total	11.4		mg/kg	4.27	0.229	2	11/27/24 10:11	11/27/24 17:39	EPA 3050B	1,6010D	DMC
Manganese, Total	212		mg/kg	0.854	0.136	2	11/27/24 10:11	11/27/24 17:39	EPA 3050B	1,6010D	DMC
Mercury, Total	ND		mg/kg	0.070	0.046	1	11/27/24 11:10	11/29/24 17:21	EPA 7471B	1,7471B	MJR
Nickel, Total	25.3		mg/kg	2.14	0.207	2	11/27/24 10:11	11/27/24 17:39	EPA 3050B	1,6010D	DMC
Selenium, Total	0.282	J	mg/kg	1.71	0.220	2	11/27/24 10:11	11/27/24 17:39	EPA 3050B	1,6010D	DMC
Silver, Total	ND		mg/kg	0.427	0.242	2	11/27/24 10:11	11/27/24 17:39	EPA 3050B	1,6010D	DMC
Zinc, Total	99.3		mg/kg	4.27	0.250	2	11/27/24 10:11	11/27/24 17:39	EPA 3050B	1,6010D	DMC
General Chemistry - Mansfield Lab											
Chromium, Trivalent	9.02		mg/kg	0.875	0.175	1		11/27/24 17:39	NA	107,-	

Project Name: SOIL TESTING: 75 EVANS STREET **Lab Number:** L2468369

Project Number: 24552 **Report Date:** 12/03/24

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-06 Batch: WG2002787-1										
Arsenic, Total	ND		mg/kg	0.400	0.083	1	11/27/24 10:11	11/27/24 16:16	1,6010D	DMC
Barium, Total	ND		mg/kg	0.400	0.070	1	11/27/24 10:11	11/27/24 16:16	1,6010D	DMC
Beryllium, Total	ND		mg/kg	0.200	0.013	1	11/27/24 10:11	11/27/24 16:16	1,6010D	DMC
Cadmium, Total	ND		mg/kg	0.400	0.039	1	11/27/24 10:11	11/27/24 16:16	1,6010D	DMC
Chromium, Total	ND		mg/kg	0.400	0.038	1	11/27/24 10:11	11/27/24 16:16	1,6010D	DMC
Copper, Total	ND		mg/kg	0.400	0.103	1	11/27/24 10:11	11/27/24 16:16	1,6010D	DMC
Lead, Total	ND		mg/kg	2.00	0.107	1	11/27/24 10:11	11/27/24 16:16	1,6010D	DMC
Manganese, Total	0.299	J	mg/kg	0.400	0.064	1	11/27/24 10:11	11/27/24 16:16	1,6010D	DMC
Nickel, Total	ND		mg/kg	1.00	0.097	1	11/27/24 10:11	11/27/24 16:16	1,6010D	DMC
Selenium, Total	ND		mg/kg	0.800	0.103	1	11/27/24 10:11	11/27/24 16:16	1,6010D	DMC
Silver, Total	ND		mg/kg	0.200	0.113	1	11/27/24 10:11	11/27/24 16:16	1,6010D	DMC
Zinc, Total	ND		mg/kg	2.00	0.117	1	11/27/24 10:11	11/27/24 16:16	1,6010D	DMC

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-06 Batch: WG2002788-1										
Mercury, Total	ND		mg/kg	0.083	0.054	1	11/27/24 11:10	11/29/24 16:45	1,7471B	MJR

Prep Information

Digestion Method: EPA 7471B

Lab Control Sample Analysis

Batch Quality Control

Project Name: SOIL TESTING: 75 EVANS STREET

Project Number: 24552

Lab Number: L2468369

Report Date: 12/03/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-06 Batch: WG2002787-2								
Arsenic, Total	99		-		80-120	-		
Barium, Total	104		-		80-120	-		
Beryllium, Total	108		-		80-120	-		
Cadmium, Total	102		-		80-120	-		
Chromium, Total	103		-		80-120	-		
Copper, Total	106		-		80-120	-		
Lead, Total	102		-		80-120	-		
Manganese, Total	107		-		80-120	-		
Nickel, Total	105		-		80-120	-		
Selenium, Total	100		-		80-120	-		
Silver, Total	103		-		80-120	-		
Zinc, Total	104		-		80-120	-		
Total Metals - Mansfield Lab Associated sample(s): 01-06 Batch: WG2002788-2								
Mercury, Total	96		-		80-120	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: SOIL TESTING: 75 EVANS STREET
Project Number: 24552
Lab Number: L2468369
Report Date: 12/03/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-06 QC Batch ID: WG2002787-3 QC Sample: L2468273-01 Client ID: MS Sample												
Arsenic, Total	5.81	9.42	14.6	93		-	-		75-125	-		20
Barium, Total	13.1	157	169	99		-	-		75-125	-		20
Beryllium, Total	0.228J	3.92	4.16	106		-	-		75-125	-		20
Cadmium, Total	ND	4.16	2.56J	**62**	Q	-	-		75-125	-		20
Chromium, Total	5.02	15.7	20.4	98		-	-		75-125	-		20
Copper, Total	2.32J	19.6	21.5	110		-	-		75-125	-		20
Lead, Total	3.06J	41.6	43.9	105		-	-		75-125	-		20
Manganese, Total	204	39.2	241	94		-	-		75-125	-		20
Nickel, Total	5.30J	39.2	41.9	107		-	-		75-125	-		20
Selenium, Total	ND	9.42	10.0	106		-	-		75-125	-		20
Silver, Total	ND	3.92	3.99	102		-	-		75-125	-		20
Zinc, Total	6.90J	39.2	44.2	112		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-06 QC Batch ID: WG2002788-3 QC Sample: L2468369-01 Client ID: 20241120-BORE1-SAMPLE 1												
Mercury, Total	0.084J	1.46	1.50	102		-	-		80-120	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: SOIL TESTING: 75 EVANS STREET

Project Number: 24552

Lab Number: L2468369

Report Date: 12/03/24

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-06 QC Batch ID: WG2002788-4 QC Sample: L2468369-01 Client ID: 20241120-BORE1-SAMPLE 1						
Mercury, Total	0.084J	0.140	mg/kg	NC		20

INORGANICS
&
MISCELLANEOUS

Project Name: SOIL TESTING: 75 EVANS STREET
Project Number: 24552
Lab Number: L2468369
Report Date: 12/03/24

SAMPLE RESULTS

Lab ID: L2468369-01
Client ID: 20241120-BORE1-SAMPLE 1
Sample Location: 75 EVANS ST., HAMBURG, NY
Sample Depth:
Matrix: Soil

Date Collected: 11/20/24 14:00
Date Received: 11/20/24
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	86.4		%	0.100	NA	1	-	11/26/24 10:27	121,2540G	ROI
Cyanide, Total	ND		mg/kg	1.1	0.23	1	12/02/24 19:00	12/03/24 13:16	1,9010C/9012B	JER
Chromium, Hexavalent	ND		mg/kg	0.926	0.185	1	11/26/24 10:15	11/26/24 15:12	1,7196A	RDS

Project Name: SOIL TESTING: 75 EVANS STREET
Project Number: 24552
Lab Number: L2468369
Report Date: 12/03/24

SAMPLE RESULTS

Lab ID: L2468369-02
Client ID: 20241120-BORE1-SAMPLE 2
Sample Location: 75 EVANS ST., HAMBURG, NY
Date Collected: 11/20/24 14:00
Date Received: 11/20/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	76.2		%	0.100	NA	1	-	11/26/24 10:27	121,2540G	ROI
Cyanide, Total	ND		mg/kg	1.2	0.26	1	12/02/24 19:00	12/03/24 13:17	1,9010C/9012B	JER
Chromium, Hexavalent	ND		mg/kg	1.05	0.210	1	11/26/24 10:15	11/26/24 15:12	1,7196A	RDS

Project Name: SOIL TESTING: 75 EVANS STREET
Project Number: 24552
Lab Number: L2468369
Report Date: 12/03/24

SAMPLE RESULTS

Lab ID: L2468369-03
Client ID: 20241120-BORE2-SAMPLE 3
Sample Location: 75 EVANS ST., HAMBURG, NY
Sample Depth:
Matrix: Soil

Date Collected: 11/20/24 14:00
Date Received: 11/20/24
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	86.0		%	0.100	NA	1	-	11/26/24 10:27	121,2540G	ROI
Cyanide, Total	ND		mg/kg	1.1	0.24	1	12/02/24 19:00	12/03/24 13:18	1,9010C/9012B	JER
Chromium, Hexavalent	ND		mg/kg	0.930	0.186	1	11/26/24 10:15	11/26/24 15:12	1,7196A	RDS

Project Name: SOIL TESTING: 75 EVANS STREET
Project Number: 24552
Lab Number: L2468369
Report Date: 12/03/24

SAMPLE RESULTS

Lab ID: L2468369-04
Client ID: 20241120-BORE2-SAMPLE 4
Sample Location: 75 EVANS ST., HAMBURG, NY
Date Collected: 11/20/24 14:00
Date Received: 11/20/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	82.4		%	0.100	NA	1	-	11/26/24 10:27	121,2540G	ROI
Cyanide, Total	ND		mg/kg	1.2	0.25	1	12/02/24 19:00	12/03/24 13:19	1,9010C/9012B	JER
Chromium, Hexavalent	ND		mg/kg	0.971	0.194	1	11/26/24 10:15	11/26/24 15:12	1,7196A	RDS

Project Name: SOIL TESTING: 75 EVANS STREET
Project Number: 24552
Lab Number: L2468369
Report Date: 12/03/24

SAMPLE RESULTS

Lab ID: L2468369-05
Client ID: 20241120-BORE3-SAMPLE 5
Sample Location: 75 EVANS ST., HAMBURG, NY
Date Collected: 11/20/24 14:00
Date Received: 11/20/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	92.2		%	0.100	NA	1	-	11/26/24 10:27	121,2540G	ROI
Cyanide, Total	3.3		mg/kg	1.0	0.22	1	12/02/24 19:00	12/03/24 13:20	1,9010C/9012B	JER
Chromium, Hexavalent	ND		mg/kg	0.868	0.174	1	11/26/24 10:15	11/26/24 15:12	1,7196A	RDS

Project Name: SOIL TESTING: 75 EVANS STREET
Project Number: 24552
Lab Number: L2468369
Report Date: 12/03/24

SAMPLE RESULTS

Lab ID: L2468369-06
Client ID: 20241120-BORE3-SAMPLE 6
Sample Location: 75 EVANS ST., HAMBURG, NY
Sample Depth:
Matrix: Soil

Date Collected: 11/20/24 14:00
Date Received: 11/20/24
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	91.4		%	0.100	NA	1	-	11/26/24 10:27	121,2540G	ROI
Cyanide, Total	ND		mg/kg	1.1	0.22	1	12/02/24 19:00	12/03/24 13:21	1,9010C/9012B	JER
Chromium, Hexavalent	ND		mg/kg	0.875	0.175	1	11/26/24 10:15	11/26/24 15:12	1,7196A	RDS

Project Name: SOIL TESTING: 75 EVANS STREET **Lab Number:** L2468369

Project Number: 24552 **Report Date:** 12/03/24

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01-06 Batch: WG2002464-1										
Chromium, Hexavalent	ND		mg/kg	0.800	0.160	1	11/26/24 10:15	11/26/24 15:12	1,7196A	RDS
General Chemistry - Westborough Lab for sample(s): 01-06 Batch: WG2004201-1										
Cyanide, Total	ND		mg/kg	0.94	0.20	1	12/02/24 19:00	12/03/24 13:12	1,9010C/9012B	JER

Lab Control Sample Analysis

Batch Quality Control

Project Name: SOIL TESTING: 75 EVANS STREET

Project Number: 24552

Lab Number: L2468369

Report Date: 12/03/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-06 Batch: WG2002464-2								
Chromium, Hexavalent	85		-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-06 Batch: WG2004201-2 WG2004201-3								
Cyanide, Total	**78**	Q	94		80-120	23		35

Matrix Spike Analysis
Batch Quality Control

Project Name: SOIL TESTING: 75 EVANS STREET
Project Number: 24552
Lab Number: L2468369
Report Date: 12/03/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-06 QC Batch ID: WG2002464-4 QC Sample: L2468369-03 Client ID: 20241120-BORE2-SAMPLE 3												
Chromium, Hexavalent	ND	1460	444	**30**	Q	-	-		75-125	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-06 QC Batch ID: WG2004201-4 WG2004201-5 QC Sample: L2469246-03 Client ID: MS Sample												
Cyanide, Total	ND	13	13	98		14	100		75-125	2		35
General Chemistry - Westborough Lab Associated sample(s): 01-06 QC Batch ID: WG2004201-6 WG2004201-7 QC Sample: L2469246-04 Client ID: MS Sample												
Cyanide, Total	0.82J	12	13	98		13	100		75-125	2		35

Lab Duplicate Analysis

Batch Quality Control

Project Name: SOIL TESTING: 75 EVANS STREET

Project Number: 24552

Lab Number: L2468369

Report Date: 12/03/24

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-06 QC Batch ID: WG2002427-1 QC Sample: L2468369-01 Client ID: 20241120-BORE1-SAMPLE 1						
Solids, Total	86.4	86.2	%	0		20
General Chemistry - Westborough Lab Associated sample(s): 01-06 QC Batch ID: WG2002464-6 QC Sample: L2468369-03 Client ID: 20241120-BORE2-SAMPLE 3						
Chromium, Hexavalent	ND	ND	mg/kg	NC		20

Project Name: SOIL TESTING: 75 EVANS STREET
Project Number: 24552

Lab Number: L2468369
Report Date: 12/03/24

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2468369-01A	Plastic 2oz unpreserved for TS	B	NA		2.3	Y	Absent		TS(7)
L2468369-01B	Metals Only-Glass 60mL/2oz unpreserved	B	NA		2.3	Y	Absent		BE-TI(180),BA-TI(180),AS-TI(180),AG-TI(180),CR-TI(180),NI-TI(180),PB-TI(180),SE-TI(180),CU-TI(180),ZN-TI(180),MN-TI(180),HG-T(28),CD-TI(180)
L2468369-01C	Vial Large Septa unpreserved (4oz)	B	NA		2.3	Y	Absent		NYTCL-8260(14)
L2468369-01D	Glass 120ml/4oz unpreserved	B	NA		2.3	Y	Absent		NYTCL-8270(14),TCN-9010(14),HERB-APA(14),NYTCL-8081(14),NYTCL-8082(365),HEXCR-7196(30)
L2468369-01E	Glass 500ml/16oz unpreserved	B	NA		2.3	Y	Absent		NYTCL-8270(14),TCN-9010(14),HERB-APA(14),NYTCL-8081(14),NYTCL-8082(365),HEXCR-7196(30)
L2468369-01F	Plastic 8oz unpreserved	B	NA		2.3	Y	Absent		A2-NY-1633(90)
L2468369-01X	Vial MeOH preserved split	B	NA		2.3	Y	Absent		NYTCL-8260(14)
L2468369-01Y	Vial Water preserved split	B	NA		2.3	Y	Absent	**26-NOV-24 07:47**	NYTCL-8260(14)
L2468369-01Z	Vial Water preserved split	B	NA		2.3	Y	Absent	**26-NOV-24 07:47**	NYTCL-8260(14)
L2468369-02A	Plastic 2oz unpreserved for TS	A	NA		2.1	Y	Absent		TS(7)
L2468369-02B	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.1	Y	Absent		BE-TI(180),BA-TI(180),AS-TI(180),AG-TI(180),NI-TI(180),CR-TI(180),CU-TI(180),PB-TI(180),ZN-TI(180),SE-TI(180),HG-T(28),MN-TI(180),CD-TI(180)
L2468369-02C	Vial Large Septa unpreserved (4oz)	A	NA		2.1	Y	Absent		NYTCL-8260(14)
L2468369-02D	Glass 120ml/4oz unpreserved	A	NA		2.1	Y	Absent		TCN-9010(14),NYTCL-8270(14),HERB-APA(14),NYTCL-8081(14),NYTCL-8082(365),HEXCR-7196(30)
L2468369-02E	Glass 500ml/16oz unpreserved	A	NA		2.1	Y	Absent		TCN-9010(14),NYTCL-8270(14),HERB-APA(14),NYTCL-8081(14),NYTCL-8082(365),HEXCR-7196(30)
L2468369-02F	Plastic 8oz unpreserved	A	NA		2.1	Y	Absent		A2-NY-1633(90)
L2468369-02X	Vial MeOH preserved split	A	NA		2.1	Y	Absent		NYTCL-8260(14)

*Values in parentheses indicate holding time in days

Project Name: SOIL TESTING: 75 EVANS STREET
Project Number: 24552

Lab Number: L2468369
Report Date: 12/03/24

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2468369-02Y	Vial Water preserved split	A	NA		2.1	Y	Absent	**26-NOV-24 07:47**	NYTCL-8260(14)
L2468369-02Z	Vial Water preserved split	A	NA		2.1	Y	Absent	**26-NOV-24 07:47**	NYTCL-8260(14)
L2468369-03A	Plastic 2oz unpreserved for TS	A	NA		2.1	Y	Absent		TS(7)
L2468369-03B	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.1	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),NI-TI(180),CR-TI(180),PB-TI(180),SE-TI(180),CU-TI(180),ZN-TI(180),HG-T(28),MN-TI(180),CD-TI(180)
L2468369-03C	Vial Large Septa unpreserved (4oz)	A	NA		2.1	Y	Absent		NYTCL-8260(14)
L2468369-03D	Glass 120ml/4oz unpreserved	A	NA		2.1	Y	Absent		TCN-9010(14),NYTCL-8270(14),HERB-APA(14),NYTCL-8081(14),NYTCL-8082(365),HEXCR-7196(30)
L2468369-03E	Glass 500ml/16oz unpreserved	A	NA		2.1	Y	Absent		TCN-9010(14),NYTCL-8270(14),HERB-APA(14),NYTCL-8081(14),NYTCL-8082(365),HEXCR-7196(30)
L2468369-03F	Plastic 8oz unpreserved	A	NA		2.1	Y	Absent		A2-NY-1633(90)
L2468369-03X	Vial MeOH preserved split	A	NA		2.1	Y	Absent		NYTCL-8260(14)
L2468369-03Y	Vial Water preserved split	A	NA		2.1	Y	Absent	**26-NOV-24 07:47**	NYTCL-8260(14)
L2468369-03Z	Vial Water preserved split	A	NA		2.1	Y	Absent	**26-NOV-24 07:47**	NYTCL-8260(14)
L2468369-04A	Plastic 2oz unpreserved for TS	B	NA		2.3	Y	Absent		TS(7)
L2468369-04B	Metals Only-Glass 60mL/2oz unpreserved	B	NA		2.3	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),NI-TI(180),CR-TI(180),CU-TI(180),PB-TI(180),SE-TI(180),ZN-TI(180),HG-T(28),MN-TI(180),CD-TI(180)
L2468369-04C	Vial Large Septa unpreserved (4oz)	B	NA		2.3	Y	Absent		NYTCL-8260(14)
L2468369-04D	Glass 120ml/4oz unpreserved	B	NA		2.3	Y	Absent		NYTCL-8270(14),TCN-9010(14),HERB-APA(14),NYTCL-8081(14),NYTCL-8082(365),HEXCR-7196(30)
L2468369-04E	Glass 500ml/16oz unpreserved	B	NA		2.3	Y	Absent		NYTCL-8270(14),TCN-9010(14),HERB-APA(14),NYTCL-8081(14),NYTCL-8082(365),HEXCR-7196(30)
L2468369-04F	Plastic 8oz unpreserved	B	NA		2.3	Y	Absent		A2-NY-1633(90)
L2468369-04X	Vial MeOH preserved split	B	NA		2.3	Y	Absent		NYTCL-8260(14)
L2468369-04Y	Vial Water preserved split	B	NA		2.3	Y	Absent	**26-NOV-24 07:47**	NYTCL-8260(14)
L2468369-04Z	Vial Water preserved split	B	NA		2.3	Y	Absent	**26-NOV-24 07:47**	NYTCL-8260(14)
L2468369-05A	Plastic 2oz unpreserved for TS	B	NA		2.3	Y	Absent		TS(7)

*Values in parentheses indicate holding time in days

Project Name: SOIL TESTING: 75 EVANS STREET
Project Number: 24552

Lab Number: L2468369
Report Date: 12/03/24

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2468369-05B	Metals Only-Glass 60mL/2oz unpreserved	B	NA		2.3	Y	Absent		BE-TI(180),BA-TI(180),AS-TI(180),AG-TI(180),NI-TI(180),CR-TI(180),CU-TI(180),PB-TI(180),SE-TI(180),ZN-TI(180),HG-T(28),MN-TI(180),CD-TI(180)
L2468369-05C	Vial Large Septa unpreserved (4oz)	B	NA		2.3	Y	Absent		NYTCL-8260(14)
L2468369-05D	Glass 120ml/4oz unpreserved	B	NA		2.3	Y	Absent		TCN-9010(14),NYTCL-8270(14),HERB-APA(14),NYTCL-8081(14),NYTCL-8082(365),HEXCR-7196(30)
L2468369-05E	Glass 500ml/16oz unpreserved	B	NA		2.3	Y	Absent		TCN-9010(14),NYTCL-8270(14),HERB-APA(14),NYTCL-8081(14),NYTCL-8082(365),HEXCR-7196(30)
L2468369-05F	Plastic 8oz unpreserved	B	NA		2.3	Y	Absent		A2-NY-1633(90)
L2468369-05X	Vial MeOH preserved split	B	NA		2.3	Y	Absent		NYTCL-8260(14)
L2468369-05Y	Vial Water preserved split	B	NA		2.3	Y	Absent	**26-NOV-24 07:47**	NYTCL-8260(14)
L2468369-05Z	Vial Water preserved split	B	NA		2.3	Y	Absent	**26-NOV-24 07:47**	NYTCL-8260(14)
L2468369-06A	Plastic 2oz unpreserved for TS	B	NA		2.3	Y	Absent		TS(7)
L2468369-06B	Metals Only-Glass 60mL/2oz unpreserved	B	NA		2.3	Y	Absent		BE-TI(180),BA-TI(180),AS-TI(180),AG-TI(180),NI-TI(180),CR-TI(180),ZN-TI(180),SE-TI(180),CU-TI(180),PB-TI(180),MN-TI(180),HG-T(28),CD-TI(180)
L2468369-06C	Vial Large Septa unpreserved (4oz)	B	NA		2.3	Y	Absent		NYTCL-8260(14)
L2468369-06D	Glass 120ml/4oz unpreserved	B	NA		2.3	Y	Absent		TCN-9010(14),NYTCL-8270(14),HERB-APA(14),NYTCL-8081(14),NYTCL-8082(365),HEXCR-7196(30)
L2468369-06E	Glass 500ml/16oz unpreserved	B	NA		2.3	Y	Absent		TCN-9010(14),NYTCL-8270(14),HERB-APA(14),NYTCL-8081(14),NYTCL-8082(365),HEXCR-7196(30)
L2468369-06F	Plastic 8oz unpreserved	B	NA		2.3	Y	Absent		A2-NY-1633(90)
L2468369-06X	Vial MeOH preserved split	B	NA		2.3	Y	Absent		NYTCL-8260(14)
L2468369-06Y	Vial Water preserved split	B	NA		2.3	Y	Absent	**26-NOV-24 07:47**	NYTCL-8260(14)
L2468369-06Z	Vial Water preserved split	B	NA		2.3	Y	Absent	**26-NOV-24 07:47**	NYTCL-8260(14)

*Values in parentheses indicate holding time in days

Project Name:	SOIL TESTING: 75 EVANS STREET	**Lab Number:**	L2468369
Project Number:	24552	**Report Date:**	12/03/24

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	SOIL TESTING: 75 EVANS STREET	**Lab Number:**	L2468369
Project Number:	24552	**Report Date:**	12/03/24

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	SOIL TESTING: 75 EVANS STREET	**Lab Number:**	L2468369
Project Number:	24552	**Report Date:**	12/03/24

Data Qualifiers

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name: SOIL TESTING: 75 EVANS STREET **Lab Number:** L2468369

Project Number: 24552 **Report Date:** 12/03/24

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

107 Calculation method.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

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Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625.1: alpha-Terpineol
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol, Azobenzene; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine, 2,6-Dichlorophenol.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Nonpotable Water: EPA RSK-175 Dissolved Gases
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables).
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

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L2468369 27NOV24
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Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1 of 1

Date Rec'd in Lab 11/21/24

Project Information
Project Name: Soil Testing: 75 Evans Street
Project Location: 75 Evans St Hamburg NY
Project # 24552
(Use Project name as Project #) ☐
Project Manager: Sean Fitzgerald
ALPHAQuote #:

Turn-Around Time
Standard ☐ Due Date:
Rush (only if pre approved) ☐ # of Days:

Client Information
Client: Encorus Group Engineering
Address: 295 Main Street
Phone: 716-592-3980
Fax:
Email: Labresults@encorus.com

Deliverables
☐ ASP-A ☐ ASP-B
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Billing Information
☐ Same as Client Info
PO #

Regulatory Requirement
☐ NY TOGS ☒ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Disposal Site Information
Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:

Please specify Metals or TAL.

ANALYSIS

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	NY Part 375								Sample Specific Comments	Total Bottle
68369-01	20241120-Bore 1-Sample 1	11/20/24	1400			✓									
-02	- Bore 1-Sample 2					✓									
-03	- Bore 2-Sample 3					✓									
-04	- Bore 2-Sample 4					✓									
-05	- Bore 3-Sample 5					✓									
-06	- Bore 3-Sample 6					✓									

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type
Preservative

Relinquished By:	Date/Time	Received By:	Date/Time
Daniel G. Korff [signature]	11/20/2024 1556	C. [signature] Pace	11-20-24 1556
C. [signature] Pace	11-20-24 1558	[signature] S/L	11-20-24 1558
Russell B. Bishop	11-20-24 1611	[signature]	
[signature]	0200	[signature]	11/21/24 0200

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)

ENCORUS GROUP

23 Mechanic Street
Springville, NY 14141

295 Main Street
West Seneca, NY 14224

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Appendix C Sample Map

B-3
B-2
B-1

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Appendix D Geotechnical Engineering Report

GLYNN GROUP
ENGINEERING & ARCHITECTURE, PLLC

Civil • Geotechnical
Structural • Architecture
Material Testing • Consulting

NYSDOT Region 5 Storage Building
75 Evans Street
Hamburg, New York

Geotechnical Engineering Report

GGEA 24-1252

Prepared for:
Encorus Group
23 Mechanic Street
Springville, New York 14141

Prepared by:
Glynn Group Engineering & Architecture, PLLC
415 South Transit Street
Lockport, New York 14094





November 21, 2024

GLYNN GROUP ENGINEERING & ARCHITECTURE, PLLC

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APPENDICES

- A Subsurface Exploration Logs
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- D Fill Specifications
- E Seismic Site Class and Design Category

1.0 INTRODUCTION

1.1 SCOPE

This report provides subsurface exploration data and geotechnical recommendations for the proposed construction of a new storage building for the NYSDOT Region 5 facility at 75 Evans Street in the Town of Hamburg, New York. Glynn Group Engineering & Architecture, PLLC (GGEA) has provided the following scope of services:

1. Performed a site visit to examine site topography and establish three (3) soil boring locations to provide a representative profile of subsurface conditions throughout the footprint of the proposed building.
2. Cleared utilities with UDig NY through drilling subcontractor NW Contracting.
3. Mobilized GGEA's drilling subcontractor with a truck mounted drill rig and support crew.
4. Provided SPT soil sampling at each boring location in accordance with ASTM D1586 "Standard Test Method for Penetration Test and Split-Barrel Sampling of Soils". Each boring was advanced to auger refusal on shale rock.
5. Provided soil boring logs (prepared by NW Contracting) to include SPT data, N values, soil classification, refusal depth and encountered groundwater conditions.
6. Prepared geotechnical report in accordance with the 2020 NYS Building Code to include subsurface design parameters, seismic site class and design category, groundwater conditions, foundation recommendations, slab on grade recommendations and construction recommendations.

1.2 CONTRACT

GGEA performed this study in accordance with a written proposal to Encorus Group dated August 2, 2024. GGEA received the notice to proceed via signed contract from Mr. Joseph M. Lowry III of Encorus Group on October 18, 2024. All services provided by GGEA are subject to the Standard Terms and Conditions included in the geotechnical proposal.

1.3 EXCLUSIONS

The project efforts exercised by GGEA include geotechnical analysis, design recommendations and the preparation of this report. The scope of this report specifically excludes any review of former site use, in particular, environmental or pollution related concerns.

2.0 PROJECT BACKGROUND

2.1 SITE DESCRIPTION AND PROPOSED DEVELOPMENT

The NYSDOT Region 5 facility is located at 75 Evans Street in the Town of Hamburg, New York. The facility encompasses several buildings and is located at the northwest corner of the intersection of Evans Street and West Avenue (refer to the Project Location Plan S1 included in Appendix B).

The proposed storage building is to be located at the approximate midpoint of the property along the western property line just north of an existing metal storage building. The proposed structure is to be a one (1) story Pre Engineered Metal Building (PEMB) with a footprint of approximately 3,830 square feet (refer to Boring Location Plan S2B included in Appendix C). The property is relatively flat and covered by compacted crushed stone throughout the proposed building footprint.

2.2 GEOLOGIC SETTING

The Surficial Geologic Map of New York identifies site soils to be composed of sandy lacustrine beach sediment. The soil profile at this site is the result of the last glacial advance of the Pleistocene Epoch, referred to as the Wisconsinan Glacial Stage, which ended approximately 12,000 years ago. As the glacier advanced over the Western New York terrain, the mass carved and crushed the underlying soil and rock to form glacial till, which typically consists of a dense matrix of silt, sand, rock and clay deposited beneath the ice. As the climate warmed and the glacier receded, meltwater was impounded by the receding glacier and local topography to create proglacial lakes throughout much of the area. Sediments were deposited from these lakes in the form of sands, silts and clays. The soils encountered at this site are composed of shoreline beach sands associated with Lake Whittlesey (ancestral Lake Erie) overlying granular glacial till with shale rock fragments. Shale bedrock of the Upper Devonian West Falls Group is located at a depth of approximately 18.5 feet below existing grade.

3.0 FIELD EXPLORATION AND ANALYSIS

3.1 METHODOLOGY

The subsurface exploration consisted of three (3) SPT soil borings performed at locations selected by Architectural Resourses to provide a representative soil profile throughout the footprint of the proposed building as identified on Boring Location Plans S2A and S2B included in Appendix C. GGEA performed a site visit on October 28, 2024 to examine the site topography and establish soil boring locations in accordance with the boring location plans. NW Contracting mobilized to the site on October 31, 2024 and completed drilling operations on the same day. Boreholes were backfilled with soil cuttings and repaired in kind upon drilling completion.

Soil boring and sampling operations were performed using hollow stem augers to advance through overburden materials in accordance with ASTM D1586 “Standard Test Method for Standard Penetration Test (SPT) and Split-Barrel Sampling of Soils”. Resistance values, or blow counts, were recorded for each six-inch advancement of a twenty-four inch long, two inch diameter split spoon sampler. “N” values were calculated by totaling the resistance values for the 6/12 and 12/18 inch intervals. All data recorded during drilling operations can be found on the soil boring logs included in Appendix A.

Retrieved soil samples were logged and visually classified by NW Contracting in accordance with the ASEE System of Definition for Visual Identification of Soils (Burmister Classification System) and ASTM D2488 “Standard Practice for Description and Identification of Soils (Visual – Manual Procedure)”. Soil boring logs were reviewed by GGEA to establish Unified Soil Classification System (USCS) classifications.

3.2 SUBSURFACE CONDITIONS

The subsurface conditions were similar at all three boring locations, with surficial fill materials encountered to a depth of approximately 4.0 feet followed by loose to dense beach sand to a depth of approximately 12.0 feet, compact to dense granular glacial till to a depth of approximately 18.5 feet and shale

rock thereafter. Specific subsurface conditions can be found on the soil boring logs included in Appendix A, however soil profiles for each boring location have been summarized as follows:

B-1	0.0 – 2.0 ft	Black, moist, dense, silty sand with gravel (SM) and cinders FILL. N value of 40.
	2.0 – 4.0 ft	Gray, moist, compact, silty sand with gravel (SM) and shale fragment FILL. N value of 20.
	4.0 – 13.0 ft	Brown, wet, compact to loose, poorly graded sand (SP). N values range from 15 to 8.
	13.0 – 18.0 ft	Black, moist, dense, sandy silt (ML), trace of shale fragments. N value of 31.
	18.0 – 18.5 ft	Black, moist, weathered shale.
	> 18.5 ft	Shale bedrock.
B-2	0.0 – 0.5 ft	Concrete.
	0.5 – 2.0 ft	Gray and brown, moist, very dense, poorly graded gravel with sand (GP) and slag FILL. N value of 56.
	2.0 – 2.5 ft	Gray, moist, loose, poorly graded gravel with sand (GP) and shale fragment FILL.
	2.5 – 13.0 ft	Brown, extremely moist to wet, loose to dense, poorly graded sand (SP). N values range from 6 to 35.
	13.0 – 18.5 ft	Black, moist, compact to dense, sandy silt (ML), trace of shale fragments. N values range from 25 to 30.
B-3	0.0 – 0.5 ft	Asphalt pavement.
	0.5 – 2.0 ft	Black, moist, compact, poorly graded sand with gravel (SP) and slag FILL. N value of 12.
	2.0 – 4.0 ft	Gray, moist, loose, poorly graded sand with gravel (SP) and shale fragment FILL. N value of 12.
	4.0 – 11.0 ft	Brown, wet, loose to compact, poorly graded sand (SP). N values range from 6 to 11.
	11.0 – 18.9 ft	Black, wet, compact to dense, sandy silt (ML), trace of shale fragments. N values range from 23 to > 50.

It is GGEA's opinion the extent of this exploration was sufficient to accurately characterize the subsurface conditions and provide information necessary for the preparation of this report. The soil borings portray the subsurface conditions encountered at the soil boring locations at the time of exploration. The stratification lines shown on the soil boring logs are approximate, whereas in-situ the changes between strata may be more gradual. Sample recovery was limited to the diameter of the sampling equipment, such that in-situ materials with dimensions that exceed 2 inches such as large diameter gravel, cobbles and boulders were not recovered.

3.3 GROUNDWATER

Groundwater was measured at a depth of 13.4 feet at boring B-1, 15.6 feet at boring B-2 and 10.8 feet at boring B-3 upon the completion of drilling efforts. The augers did not remain in the ground for an extended period of time to allow groundwater to migrate through the soils and stabilize in the augers, nor were groundwater monitoring wells or piezometers installed to obtain accurate groundwater data. However, based on the moisture content of recovered soil samples, the stabilized groundwater elevation is estimated at a depth of 4.0 feet, where soils transition from moist to wet. Groundwater control during construction should be anticipated.

4.0 GEOTECHNICAL EVALUATION AND RECOMMENDATIONS

4.1 BEARING CAPACITY AND FOUNDATIONS

The native soils at this site are of fair to good structural quality and will provide for the construction of a shallow foundation system consisting of standard strip footings and frost walls to support the building perimeter and spread footings to support interior columns. GGEA provides design and construction recommendations for foundations as follows:

1. Excavate through existing fill material to engage sandy native soils. Based on conditions encountered at the soil boring locations, excavation to a minimum depth of 4.0 feet below existing grade will be necessary to engage native soils.
2. Control groundwater using multiple temporary sumps and suction pumps, located outside of the building footprint, to lower groundwater to a minimum depth of 1.0 foot below the bottom of the excavation.
3. Thoroughly compact the exposed sandy native subgrade using a vibratory reversible plate tamper (Bomag BPR 35/60D or equivalent) or a boom operated hydraulic compactor (Ho-pac). Provide groundwater control as necessary to facilitate compaction.
4. Native soils compacted in accordance with the above recommendations will provide for a net allowable bearing capacity of 2,000 psf.
5. The bearing capacity may be increased to 3,000 psf if the foundation bearing grade is overexcavated by 18 inches and replaced with Structural Fill. Excavated native soils and existing fill soils may be repurposed as Structural Fill pending the meet the specifications identified in Section 4.3 of this report. Structural Fill shall be placed in 9 inch lifts and compacted to 95 % modified proctor. Overexcavation shall extend horizontally beyond the edge of footing 1.0 foot for every 1.0 foot of overexcavation depth.
6. Foundation lateral forces should be restrained by one of the following options: a) tie rods spanning the building width through the foundation frost walls, b) hairpins extending from the perimeter column pedestals into the floor slab, or c) oversizing the foundations to provide friction resistance between the concrete and native soil, Structural Fill or Select Structural Fill. The coefficient of sliding for mass concrete on compacted poorly graded sand (SP) is estimated at 0.45 and the coefficient of sliding for mass concrete on Select Structural Fill is estimated at 0.55 per Chapter 3, Table 1 of NAVFAC 7.2.

4.2 SLAB ON GRADE

GGEA provides design and construction recommendations for the building interior concrete slab on grade as follows:

1. All slabs should be designed using a recognized standard procedure, such as identified in the text "Designing Floor Slabs on Grade" by Ringo and Anderson (ISBN 0-924659-34-3). The thickness of the concrete slab should be determined based on the intended usage and proposed loading.
2. Topsoil should be removed beneath the footprint of all slabs, as well as soft surficial subgrade soils of poor structural quality. Existing fill soils may remain, pending they are free of organic/deleterious materials and respond well to compaction and proof rolling.
3. Once a competent subgrade elevation is achieved, the exposed subgrade should be compacted thoroughly with a smooth drum vibratory roller to produce a uniform density throughout. In place density testing of the subgrade is not required. The top surface of the subgrade should be pitched to drain to prevent ponding of stormwater.
4. Proof roll the compacted subgrade with a fully loaded 10 wheel dump truck weighing at least 30 tons or a smooth drum roller having an effective force of at least 600 pounds per linear inch of roller width. Any area exhibiting weaving, yielding, rutting (>3/4 inch) or boiling should be reworked and compacted to produce an acceptable response *or* over excavated and replaced with Structural Fill. The depth of the undercut and type of Structural Fill will depend on the bearing condition at the base of the undercut, the weather at the time of construction and the soil material encountered. Proof rolling operations should be observed and directed by a qualified geotechnical professional.
5. After proof rolling of the prepared subgrade is successfully performed (including overexcavation and replacement of failing areas), Structural Fill should be installed as necessary to achieve the design subgrade elevation. The Structural Fill should be placed in maximum 9 inch lifts and compacted to 95% modified proctor (ASTM D1557).
6. Upon successful installation of Structural Fill to the design subgrade elevation, a granular base composed of Select Structural Fill should be installed and compacted to 95% modified proctor. The thickness of the granular base layer should be dictated by the slab design (prepared by others), however GGEA recommends a minimum granular base thickness of 8 inches.
7. Install subsurface utilities.
8. Install the concrete slab as designed. GGEA recommends a modulus of subgrade reaction (k) not to exceed 125 pci for properly prepared subgrade. The installation of a vapor barrier and specification of the concrete finish technique is at the discretion of the architect. Proper joint spacing and reinforcing steel spacing/placement will be critical to the long term performance of slab. The Portland Cement Association (PCA) recommends joint spacing in feet should be two to three times the slab thickness in inches.

Although not required for design, if the granular base is to be used as working surface for an extended period of time prior to concrete placement, the installation of a separation and reinforcement geotextile should be considered between the soil subgrade and granular base. GGEA recommends a woven geotextile such as US Fabrics US 250 (or equivalent). Any granular base that becomes contaminated with soil as a result of repeated construction traffic should be removed and replaced prior to placing concrete. While the geotextile will have no benefit once the concrete is placed, it will reduce the potential for rutting and soil contamination of the granular base if there is a prolonged period of time between granular base installation and concrete placement, especially if the granular base will be subjected to repeated construction traffic.

4.3 EXCAVATION AND BACKFILL

The soils encountered within the construction depth of this project are composed primarily of loose to dense granular fill soils and loose to compact native granular soils. Excavation through these soils can be accomplished with moderate effort from standard excavation equipment.

Classifications for encountered soil materials within the construction depth of this project consist primarily of poorly graded sand (SP), silty sand with gravel (SM) and poorly graded gravel with sand (SP). Structural Fill is defined as any soil material with the exception of USCS classifications of CH, MH, OH, OL, ML and CL-ML. Silt (ML) soils provide a potential for frost heave if subjected to water and freezing temperatures and therefore should not be used as Structural Fill within 3.5 feet of final grade. In the event excavated soils are to be repurposed as Structural Fill, the soils should be blended, stockpiled and tested prior to use as Structural Fill. Geotechnical laboratory testing should be performed for every 5,000 cubic yards of material to ensure the USCS classification is in compliance with Structural Fill specifications.

The soils encountered at this site should be classified by an OSHA competent person in accordance with 29 CFR, Part 1926, OSHA Subpart P, "Excavations and Trenches" prior to and during excavation. From the testing and exploration program, GGEA estimates the soils can be classified as Type C under the OSHA classification guidelines. However, this classification may change depending on other site criteria and moisture conditions at the time of construction. An OSHA competent person should judge the potential need for excavation bracing and excavation geometry in the field.

Utility excavations can be accomplished with minimal effort, however a trench box will be required for excavations that cannot maintain the prescribed OSHA geometry. The trench box shall extend a minimum of 18 inches above the vertical sidewall portion of the excavation.

In place density testing should be performed at a rate of one test per 50 feet of trench or 2500 square feet of area per lift, at a minimum of one test per day of placement. Specifications regarding Common Fill, Structural Fill, Select Structural Fill and Flowable Fill are included in Appendix D. Structural Fill and Select Structural Fill shall be placed in lifts not to exceed 9 inches in thickness and shall be compacted to 95 % modified proctor. All excavations for foundations and under structurally loaded areas (pavement, sidewalk, slab) shall be backfilled with properly compacted Structural Fill or Select Structural Fill. At a minimum, Select Structural Fill should be used for the upper 12 inches in all structurally loaded areas. Common Fill placed in non-structurally loaded areas shall be compacted to 90 % of modified proctor. Modified proctor testing should be performed for every 5,000 cubic yards of material installed. Foundation backfill shall be installed in a balanced condition with foundations completely backfilled prior to applying load.

4.4 EXPANSIVE SOILS

Some cohesive soils undergo volumetric change (shrinkage and swelling) with changes in moisture content and degree of saturation, which are commonly referred to as expansive soils. This condition primarily occurs with fat clay (CH) soil, which is a cohesive soil that exhibits a liquid limit of 50 or greater. The liquid limit is the water content, in percent, of a soil that defines the boundary between the plastic and viscous fluid states. Expansive soils can be found in many areas throughout Western New York and have been associated with foundation problems.

The soils encountered at this site are granular and are not susceptible to volumetric change with fluctuation in moisture content.

4.5 LIQUEFACTION

Liquefaction is the process where saturated cohesionless (granular) soils, specifically, loose sands and silts, transform from a solid into a liquid as a result of an increase in the pore water pressure caused by repeated disturbance such as experienced during seismic events. Liquefaction results in an immediate loss of shear strength and bearing capacity, causing total and differential settling of the overlying structure.

Loose, wet, granular soils were encountered from approximately 4.0 to 12.0 feet at various locations. Liquefaction analysis was performed by GGEA for representative soils in accordance with NYSDOT GDP-9, specifically loose (N= 6) wet poorly graded sand (SP) encountered at 7.0 feet at boring B-2. The soil was found to have a safety factor against liquefaction of 8.7, which is above the minimum of 1.1 to prevent liquefaction. Refer to the analysis included in Appendix E.

4.6 SETTLEMENT

Shallow foundations designed and constructed in accordance with the recommendations of this report will provide for total settlement of less than 1.0 inch and differential settlement of less than 0.5 inches.

4.7 SEISMIC SITE CLASS AND DESIGN CATEGORY

In accordance with Section 1613 (Earthquake Loads) of the 2020 NYS Building Code, GGEA has classified the site as **Seismic Site Class D.** The site classification is based on the summation of N values for the upper 100 feet of boring B-2 in accordance with ASCE 7-16 Equation 20.4-2. The design spectral response accelerations have been calculated as 0.162 g for the short period design spectral response acceleration (S_{DS}) and 0.069 g for the one second design spectral response acceleration (S_{D1}). In accordance with tables 1613.2.5(1) and 1613.2.5(2), using Risk Category II, the site is classified as **Seismic Design Category B.** Calculations have been provided in Appendix E.

4.8 GENERAL CONSTRUCTION RECOMMENDATIONS

GGEA provides general construction recommendations as follows:

1. Exposed bearing grades beneath foundations should be compacted to densify any soil that may have been disturbed by the excavation process. This can be accomplished by initially using the underside of the excavator bucket, followed by the recommendations presented in Section 4.1 of this report. Proper subgrade preparation will assure the development of the anticipated bearing strength and reduce settlement potential.

2. Soil subgrade for slab on grade areas should be sealed with a smooth drum roller regularly to minimize rutting and weather related deterioration prior to the installation of overlying stone.

3. Foundations shall bear on undisturbed native soils or property place Structural Fill, Select Structural Fill or Flowable Fill.

4. Regional regulations for frost protection of foundations require a minimum foundation depth of greater than 42 inches below final grade. GGEA recommends a minimum foundation depth of 4.0 feet.

5. Soils and fill materials shall not be stockpiled immediately adjacent to excavation sidewalls. Spoil and fill stockpiles shall be located at distance horizontally from the edge of excavations equivalent to or greater than the excavation depth (> 1 H : 1 V from the bottom of the excavation).

6. Fine grained soils, such as those encountered within the proposed construction depth for this project, may lose considerable strength and bearing capacity if subjected to prolonged saturation. The accumulation of stormwater and/or perched groundwater within foundation excavations and subsequent deterioration of the foundation subgrade during construction should not be permitted. The foundation excavations should include temporary sumps located outside of the building footprint to permit water removal by means of suction pumps during construction. Likewise, water should not be permitted to accumulate in the foundation excavations after footings have been constructed and prior to backfilling. Care should be exercised to not allow pumped water to recycle back to into the excavations. Mud mats should be considered if the subgrade integrity cannot be maintained.

7. If additional undercut is necessary during foundation excavation, the bottom should be graded to a uniform elevation and gradually sloped or stepped back to the design elevation. Undercut "pockets" should be avoided.

8. Conformance to OSHA standards is mandatory during excavation and trench work.

9. Topsoil and organic soils should be removed from all load bearing areas.

10. No fill material or concrete should be placed in water, over saturated subgrade or over frozen subgrade.

11. The foundation bearing grade should not be allowed to freeze either prior to or after placement of concrete. Insulating blankets should be used to cover bearing grades plus a one foot perimeter outside forms and constructed footings until backfill is placed.

12. Grading and contouring efforts should take care to address existing site drainage conditions and mitigate any conflicts with the proposed site development.

13. Continuous footings and associated wall loads should be proportioned to create nearly equal contact pressures throughout, which will serve to minimize differential settlement. Likewise, square spread footings and associated column loads should be proportioned to create nearly equal contact pressures at all locations.

14. Backfill foundations prior to applying load.

15. Upon excavation, if encountered soils or moisture contents are found to be different than those identified on the soil boring logs and represented within this report, the bearing capacity of the soil will need to be reevaluated by a qualified geotechnical professional. Likewise, the footing design may then require adjustment to accommodate for a change in bearing capacity or for soils of varying bearing capacity.

4.9 CONCLUSION

This completes the geotechnical report for the proposed construction of the NYSDOT Region 5 storage building at 75 Evans Street in the Town of Hamburg, New York. This report has been prepared based on the encountered subsurface conditions at the soil boring locations and pertinent data supplied by Encorus Group and Architectural Resources. The information presented within this report is intended to serve as the basis for foundation design and should be communicated to the project architect/design professional, foundation contractor and site development contractor. This report shall not be used for any other type of structure or any other location. Please contact GGEA if major project changes are made or if encountered subsurface conditions vary from those noted in this report.

Sincerely,



G. Edward Lover, P.G.
Senior Geologist

Mark W. Glynn, P.E.
Consulting Engineer, Principal

/gel

Appendix A

Subsurface Exploration Logs

NYSDOT Region 5 Storage Building
75 Evans Street
Hamburg, New York

Geotechnical Engineering Report

GGEA 24-1252

November 21, 2024

GLYNN GROUP
ENGINEERING & ARCHITECTURE, PLLC

3553 Crittenden Road
Alden, NY 14004
(716) 937- 6527
www.nwcontracting.com

KEY TO SUBSURFACE LOGS

0	SN	0/6	6/12	12/18	18/24	N	OVM	LITH	SOIL DESCRIPTION	REC	WELL	COMMENTS
j		**D**	**l**	**E**		**m**	**n**		**p**	**q**	**r**	**s**
	k							**o**				

j	Depth	**o**	Lithologic symbols for various soil types and/or bedrock units
k	Sample number	**p**	Soil descriptions and/or bedrock descriptions
l	Blow Counts	**q**	Amount of sample recovered
m	N Value	**r**	Monitoring well detail
n	OVM reading	**s**	Comments

Hardness

Soft	Scratched by fingernail
Medium	Scratched easily by penknife
Hard	Scratched with knife with difficultly
Very Hard	Cannot be scratched with knife of pick

Weathering

Very Weathered, Weathered, or Sound	Judged from relative amounts of disintegration, iron staining, core recovery, clay seams, etc.

Bedding

Fissile	< 1"
Very Thinly Bedded	1" - 2"
Thinly Bedded	2" - 4"
Medium Bedded	4" - 12"
Thick Bedded	12" - 36"
Massive	> 36"

Soil Type

Boulder	
Cobble	
Grave - Coarse	
- Fine	
Sand - Coarse	
- Medium	
- Fine	
Silt	- Non Plastic (Granular)
Clay	- Plastic (Cohesive)

Soil Particle Size

> 12"
12" - 3"
3" - 3/4"
3/4" - #4
#4 - #10
#10 - #40
#40 - #200

Split Spoon Sample



Auger or Test Pit Sample



Rock Core Sample



Shelby Tube Sample



Geoprobe Interval



Gravel Content

Term	Amount
- and	> 40
- some	25 - 40
- little	12 - 25
- trace	0 - 15

Granular

Term	Blows per Foot
- Very Loose	0 - 4
- Loose	5 - 10
- Compact	11 - 30
- Dense	31 - 50
- Very Dense	> 50

Cohesive

Term	N Value
- Very Soft	0 - 2
- Soft	3 - 4
- Firm	5 - 8
- Stiff	9 - 15
- Very Stiff	16 - 30
- Hard	> 30

CONTRACTING

3553 Crittenden Road
Alden, NY 14004
(716) 937- 6527
www.nwcontracting.com

Hole Number: B-1

DATE: 10/31/2024 ELEVATION:

PROJECT: Subsurface Investigation for Proposed Commerical Construction
75 Evans Street Hamburg, New York

PREPARED FOR: Glynn Group Engineering and Architecture Inc.

BORING LOCATION:

SN	0/6	6/12	12/18	18/24	N	LITH	DESCRIPTION AND CLASSIFICATION	REC	COMMENTS
1	14				40		Moist, black (GRAVELLEY-SAND) with fine to coarse size sand, little gravel, fill, all comprised of cinders	24"	
		19							
			21						
				18			2.00		
2	9				20		Moist, gray (GRAVELLEY-SAND) with fine to coarse size sand, little gravel, fill, all comprised of weathered shale	18"	
		12							
			8						
				5			4.00		
3	4				15		Wet, brown (SAND) with fine to coarse size sand, trace gravel, compact	22"	
		7							
			8						
				5					
4	4				9		Contains thin seams of fine size sand, loose	21"	
		4							
			5						
				3					
5	7				8		Wet, brown (SAND) with fine size sand, trace silt, loose	22"	Free standing water observed at 13.4 feet below ground surface upon boring completion.
		5							
			3						
				5					
6	4				9		Wet, brown (SAND) with fine to medium size sand, loose	18"	
		4							
			5						
				10			13.00		
7	12				31		Moist, black (SANDY-SILT) with some fine to coarse size sand, trace gravel, all comprised of black shale, trace clay, dense	20"	
		16							
			15						
				14			18.00		
8	50/2"						Moist, black (SHALE) weathered	1"	
		-					18.60		
			-		Ref.		Boring complete upon auger refusal at 18.6 feet below ground surface.		
				-					

LOGGED BY: Jerry Jones

NW CONTRACTING
3553 Crittenden Road
Alden, NY 14004
(716) 937- 6527
www.nwcontracting.com

Hole Number: B-2

DATE: 10/31/2024 ELEVATION:

PROJECT: Subsurface Investigation for Proposed Commerical Construction
75 Evans Street Hamburg, New York

PREPARED FOR: Glynn Group Engineering and Architecture Inc.

BORING LOCATION:

SN	0/6	6/12	12/18	18/24	N	LITH	DESCRIPTION AND CLASSIFICATION	REC	COMMENTS
1	-						Concrete 6-Inches 0.50	18"	
		9			56		Moist, gray and brown (SANDY-GRAVEL) with some fine to coarse size sand, comprised of slag, fill 2.00		
			47				Moist, gray (GRAVELLEY-SAND) with fine to coarse size sand, some gravel, all comprised of shale, fill 2.50	20"	60%-70% sand is fine size sand.
				10					
2	3								
		3			6		Extremely moist, brown (SAND) with fine to coarse size sand, loose		
			3						
				3					
3	4						Wet, brown (SAND) with fine size sand, trace silt, loose	19"	
		5							
			4		9				
				3					
4	2							24"	
		4							
			2		6				
				2					
5	2							24"	Free standing water observed at 15.6 feet below ground surface upon boring completion.
		3							
			5		8				
				4					
6	1						Wet, gray (SAND) with fine size sand, trace silt, dense	24"	
		5							
			30		35				
				11					
							13.00		
7	14							0"	Sample 7: No recovery
		15							
			10		25				
				10					
8	11						Moist, black (SANDY-SILT) with some fine to coarse size sand, trace gravel, all comprised of black shale, trace clay, dense	15"	
		16							
			14		30				
				50/3"					
							18.50		
							Boring complete upon auger refusal at 18.5 feet below ground surface.		

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Hole Number: B-3

DATE: 10/31/2024 ELEVATION:

PROJECT: Subsurface Investigation for Proposed Commerical Construction
75 Evans Street Hamburg, New York

PREPARED FOR: Glynn Group Engineering and Architecture Inc.

BORING LOCATION:

SN	0/6	6/12	12/18	18/24	N	LITH	DESCRIPTION AND CLASSIFICATION	REC	COMMENTS
1	-						Asphalt pavement 6-Inches 0.50	18"	
		6			12		Moist, black (GRAVELLEY-SAND) with fine to coarse size sand, little gravel, fill, all comprised of cinders 2.00		
			6						
				6					
2	8						Moist, gray (GRAVELLEY-SAND) with fine to coarse size sand, little gravel, fill, all comprised of weathered shale 4.00	12"	
		6			9				
			3						
				3					
3	3						Wet, brown (SAND) with fine to coarse size sand, loose, fine size sand seams	15"	
		3							
			3		6				
				2					
4	6						Becomes compact	22"	
		6							
			5		11				
				4					
5	4						Wet, gray (SAND) with fine size sand, trace silt, loose	23"	Free standing water observed at 10.8 feet below ground surface upon boring completion.
		3							
			3		6				
				3					
6	3							24"	
		6							
			7		13		Wet, black (SANDY-SILT) with some fine to coarse size sand, trace gravel, all comprised of black shale, trace clay, dense 11.00		
				13					
7	7						Contains little gravel	15"	
		8							
			15		23				
				16					
8	50/4"						18.90		
		-			Ref.		Boring complete upon auger refusal at 18.9 feet below ground surface.		
			-						
				-					

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Appendix B

Project Location Plan

NYSDOT Region 5 Storage Building
75 Evans Street
Hamburg, New York

Geotechnical Engineering Report

GGEA 24-1252

November 21, 2024



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GLYNN GROUP ENGINEERING & ARCHITECTURE, PLLC
415 S. TRANSIT STREET LOCKPORT, NEW YORK 14094
www.glynngroup.com
VOICE (716) 625 - 6933 / FAX (716) 625 - 6983

PROJECT:				SHEET NO.:
NYSDOT STORAGE BUILDING				S1
SUBJECT:				
PROJECT LOCATION PLAN				
CLIENT:				
ENCORUS GROUP				
PROJ. NO.:	SCALE:	DATE:	BY:	
24-1252	1" = 200'	10.28.24	GEL	

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Appendix C

Subsurface Exploration Plan

NYSDOT Region 5 Storage Building
75 Evans Street
Hamburg, New York

Geotechnical Engineering Report

GGEA 24-1252

November 21, 2024

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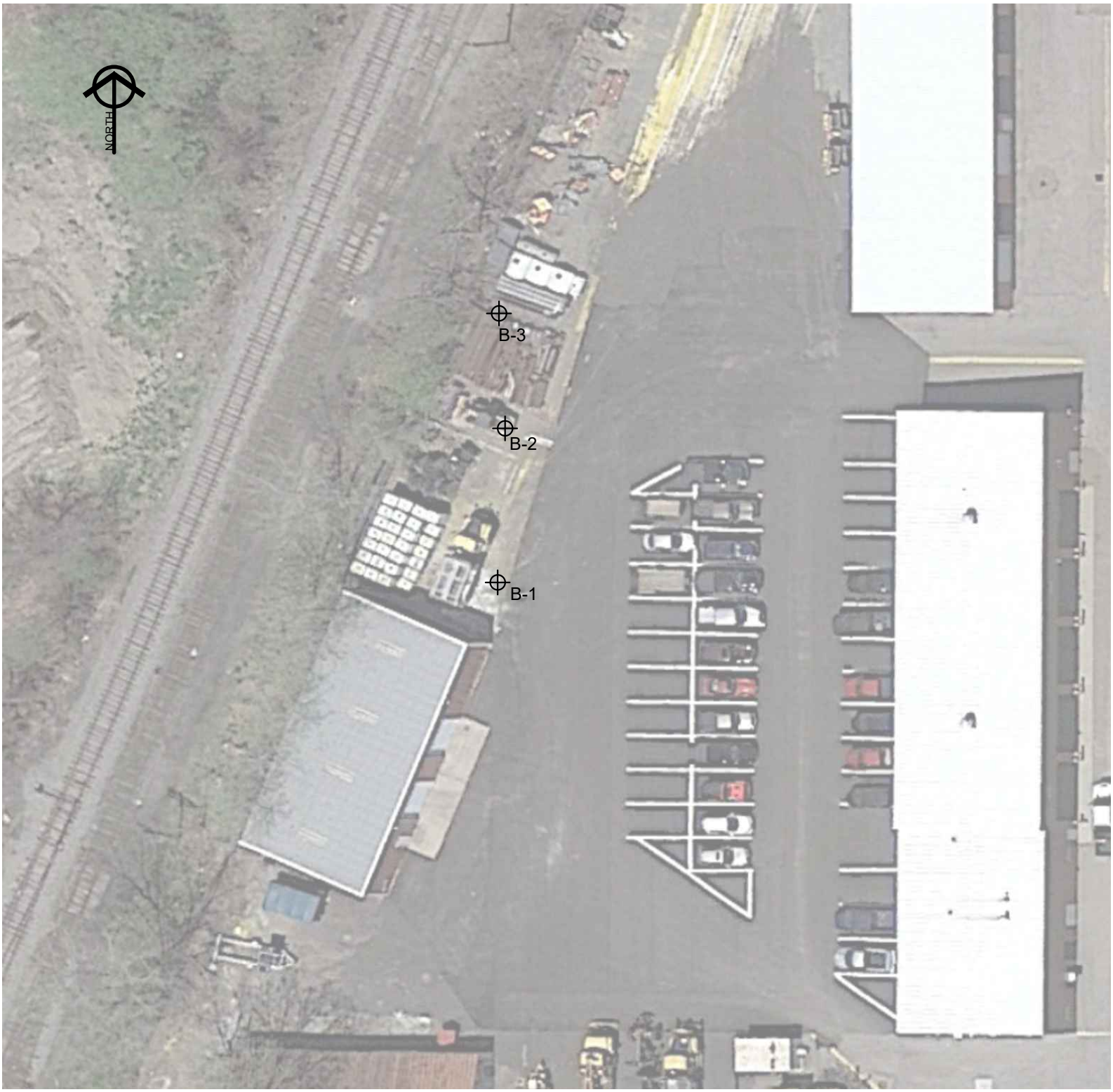

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VOICE (716) 625 - 6933 / FAX (716) 625 - 6983

PROJECT: HAMBURG STORAGE BUILDING

SUBJECT: BORING LOCATION PLAN

CLIENT: ENCORUS GROUP

PROJ. NO.:	SCALE:	DATE:	BY:
24-1252	1" = 40'	10.28.24	GEL

SHEET NO.: S2A

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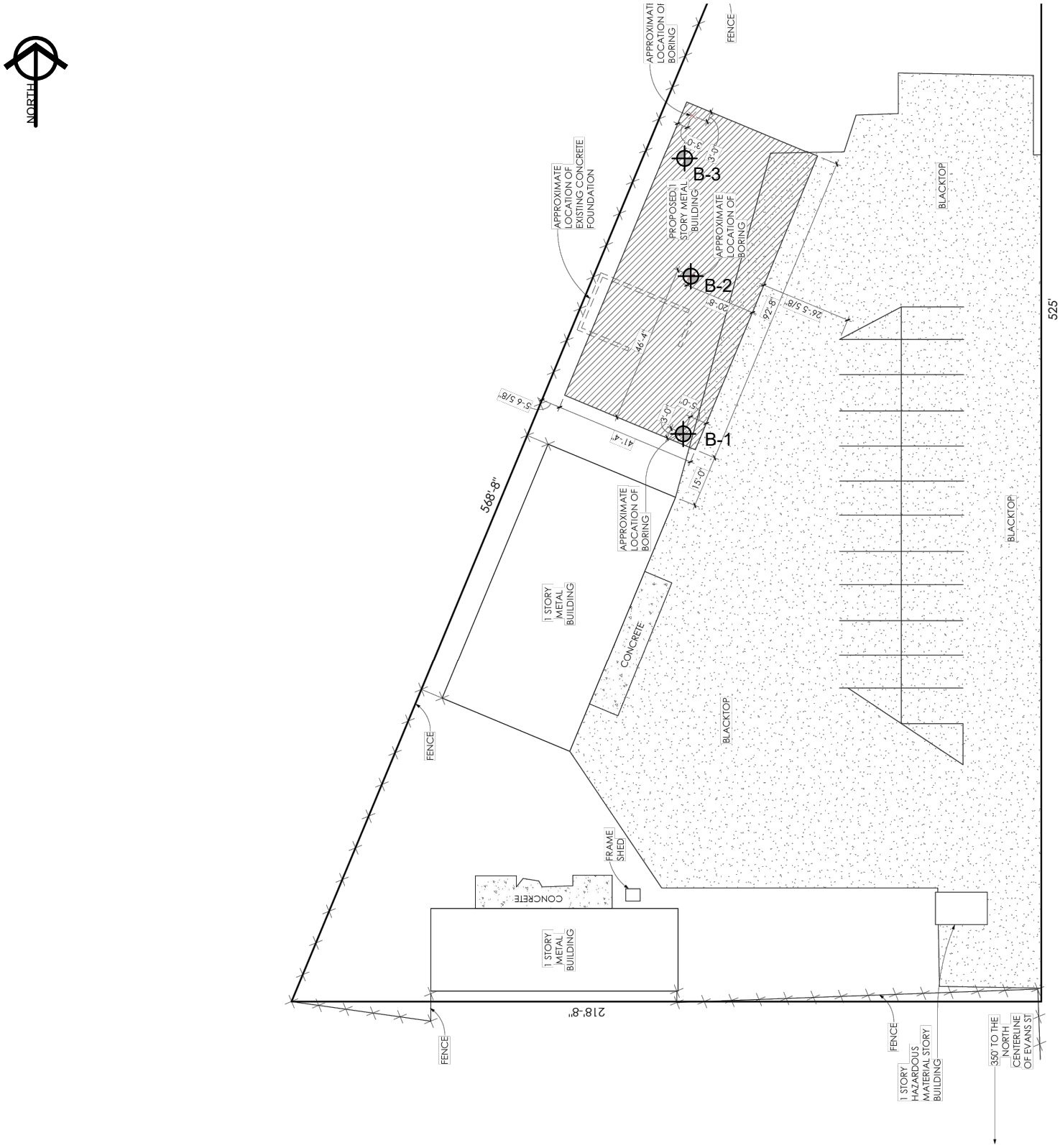

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PROJECT: NYSDOT STORAGE BUILDING

SUBJECT: BORING LOCATION PLAN

CLIENT: ENCORUS GROUP

PROJ. NO.:	SCALE:	DATE:	BY:
24-1252	1" = 40'	10.28.24	GEL

SHEET NO.: S2B

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Appendix D

Fill Specifications

NYSDOT Region 5 Storage Building
75 Evans Street
Hamburg, New York

Geotechnical Engineering Report

GGEA 24-1252

November 21, 2024

GLYNN GROUP
ENGINEERING & ARCHITECTURE, PLLC

Common Fill

All soil and/or crushed rock material with the exception
of those with USCS classifications of
CH, MH, OH, and OL.

Place material in 12 inch lifts (loose) and compact to 90 % of modified proctor (ASTM D-1557) maximum dry density within 2 % of optimum moisture content.

The material should be compacted using a smooth drum vibratory roller (for large applications) or a reversible vibratory plate tamper (for smaller applications) such as a Bomag BPR 35/60 or similar (weight > 400 lbs).

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415 South Transit Street, Lockport, New York 14094
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www.glynngroup.com

Structural Fill

All soil and/or crushed rock material with the exception
of those with USCS classifications of
CH, MH, OH, OL, ML and CL-ML.

Place material in 9 inch lifts (loose) and compact to 95 % of modified proctor (ASTM D-1557) maximum dry density within 2 % of optimum moisture content.

The material should be compacted using a smooth drum vibratory roller (for large applications) or a reversible vibratory plate tamper (for smaller applications) such as a Bomag BPR 35/60 or similar (weight > 400 lbs).

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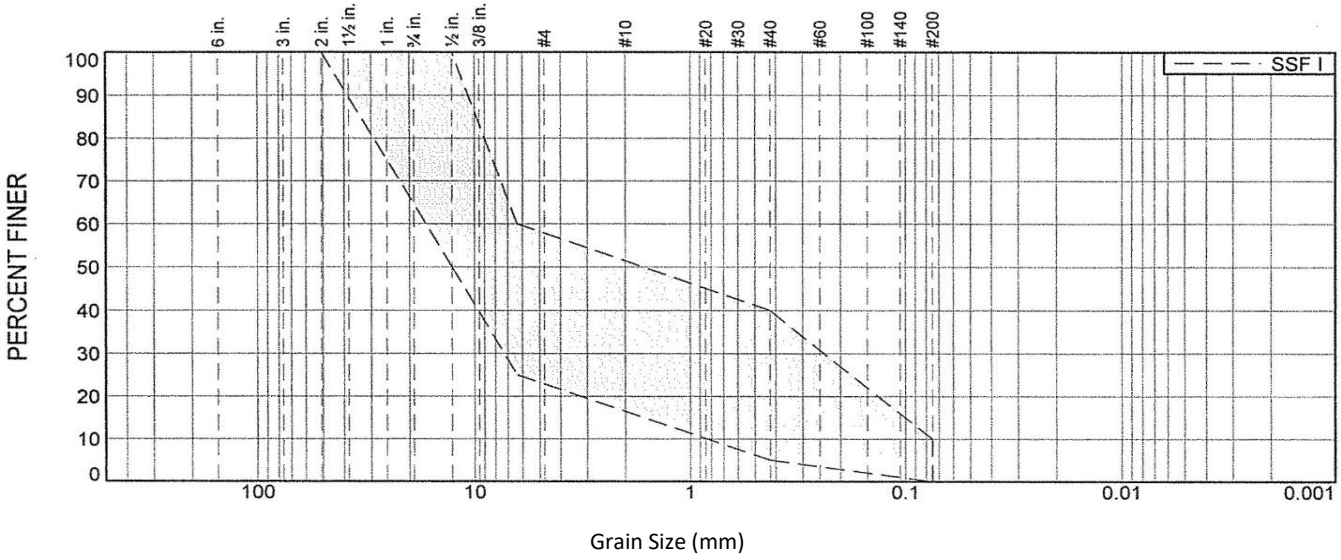
Select Structural Fill

NYSDOT Item No. 304.12 Subbase Course, Type 2

Sieve Size	Required % Passing
2 inch	100
1/4 inch	25 - 60
No. 40	5 - 40
No. 200	0 - 10



In addition to the above specification, material shall also meet the well graded qualifications of ASTM D-2487, such that USCS classification = GW, GW-GM, SW or SW-SM.

Place material in 9 inch lifts (loose) and compact to 95 % of modified proctor (ASTM D-1557) maximum dry density within 2 % of optimum moisture content.

The material should be compacted using a smooth drum vibratory roller (for large applications) or a reversible vibratory plate tamper (for smaller applications) such as a Bomag BPR 35/60 or similar (weight > 400 lbs).

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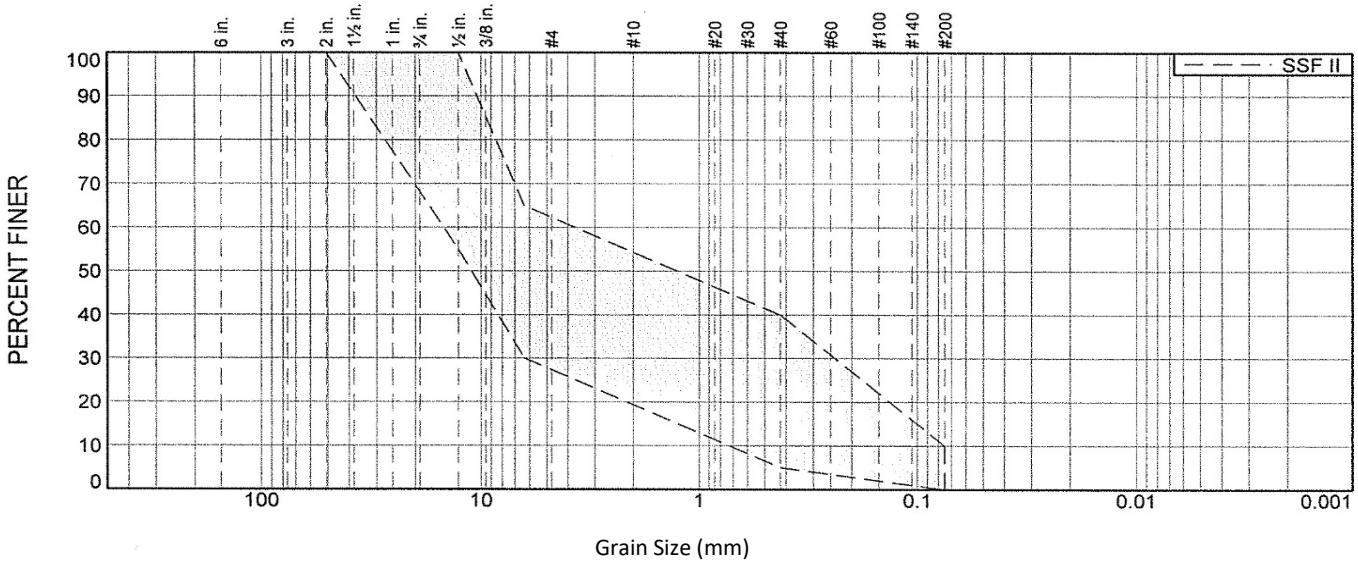
Select Structural Fill

NYSDOT Item No. 304.14 Subbase Course, Type 4

Sieve Size	Required % Passing
2 inch	100
1/4 inch	30 - 65
No. 40	5 - 40
No. 200	0 - 10



In addition to the above specification, material shall also meet the well graded qualifications of ASTM D-2487, such that USCS classification = GW, GW-GM, SW or SW-SM.

Place material in 9 inch lifts (loose) and compact to 95 % of modified proctor (ASTM D-1557) maximum dry density within 2 % of optimum moisture content.

The material should be compacted using a smooth drum vibratory roller (for large applications) or a reversible vibratory plate tamper (for smaller applications) such as a Bomag BPR 35/60 or similar (weight > 400 lbs).

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Flowable Fill

Controlled Low Strength Material (CLSM).

Typically a fly ash or cement based pozzolanic fill manufactured by local concrete plants.

Minimum 28 day compressive strength = 100 psi.

May include fine aggregate.

The material should be placed in separate lifts not to exceed 30 inches in depth and each lift should be allowed to fully cure (monitor for shrinkage and/or desiccation) prior to placing subsequent lifts or applying load.

CLSM should not be used within 42 inches of final grade due to potential freeze/thaw susceptibility and should not be used if the excavation contains standing water or is subject to groundwater infiltration.

GLYNN GROUP ENGINEERING & ARCHITECTURE, PLLC
415 South Transit Street, Lockport, New York 14094
voice 716.625.6933 / fax 716.625.6983
www.glynngroup.com

Appendix E

Seismic Site Class, Design Category and Liquefaction Analysis

NYSDOT Region 5 Storage Building
75 Evans Street
Hamburg, New York

Geotechnical Engineering Report

GGEA 24-1252

November 21, 2024

GLYNN GROUP
ENGINEERING & ARCHITECTURE, PLLC

Project : NYSDOT Region 5 Storage Building
Client: Encorus Group
GGEA # : 24-1252
Date: 11.21.24

B-2

Depth (di)	N Value (Ni)
2.5	56
7.5	6
3	35
5.5	27
81.5	100

ASCE 7-16
Equation 20.4-2

$$N = \frac{100}{\sum \frac{di}{Ni}} = 41.7$$

ASCE 7-16
Table 20.3-1

15 < *N* < 50

SITE CLASS = D

2020 NYS Code Section 1613

F_a =	1.6	Site coefficient Table 1613.2.3(1)
F_v =	2.4	Site coefficient Table 1613.2.3(2)
S_s =	0.152	Mapped accelerations short periods Figure 1613.2.1(1)
S_1 =	0.043	Mapped accelerations 1 sec period Figure 1613.2.1(2)
S_{MS} =	0.243	Maximum spectral response short periods equation 16-36
S_{M1} =	0.103	Maximum spectral response 1 sec periods equation 16-37
S_{DS} =	0.162	Design spectral response short periods equation 16-38
S_{D1} =	0.069	Design spectral response 1 sec periods equation 16-39

Risk Category = II Table 1604.5

Seismic Design Category = B Table 1613.2.5(1)
Table 1613.2.5(2)

Project : NYSDOT Region 5 Storage Building
Client: Encorus Group
GGEA # : 24-1252
Date: 11.21.24

LIQUEFACTION EVALUATION

B-2 7.0 ft

USCS:	SP		Total Overburden Pressure (To) =	770	psf
Depth:	7.0	ft	Effective Overburden Pressure (T'o) =	583	psf
Moist Unit Weight:	110	pcf			
Water Table Depth:	4.0	ft			
amax :	0.24	g			
Yd:	0.97				
g:	9.8	m/s^2			

Tav/T'o = 0.65*(amax/g)*(To/T'o)*Yd
Tav/T'o = 0.0207

C_N: 1.85 C_N shall not be greater than 2.0
ER_M: 60 %
N_{NY}: 6

$(N_1)_{60} = 1.29*C_N*E_{RM}*N_{NY}/60$
$(N_1)_{60} = 14$

Stress Ratio Required to Cause Liquefaction (Tav/T'o) = 0.18
(measured from Fig.14)

Safety Factor Against Liquefaction = **8.7**

Calculations performed in accordance with Section 3.2 of the New York State Department of Transportation Geotechnical Design Procedure GDP-9 Revision #2

Kathy Hochul, Governor

Roberta Reardon, Commissioner

Design & Construction

Contract Awards
Contract Management 35th FL
Corning Tower
Empire State Plaza
Albany NY 12242

Schedule Year	2025 through 2026
Date Requested	05/01/2026
PRC#	2026012269

Location	DOT Region 5, Erie County
Project ID#	47510
Project Type	Provide Storage Building

PREVAILING WAGE SCHEDULE FOR ARTICLE 8 PUBLIC WORK PROJECT

Attached is the current schedule(s) of the prevailing wage rates and prevailing hourly supplements for the project referenced above. A unique Prevailing Rate Case Number (PRC#) has been assigned to the schedule(s) for your project.

The schedule is effective from July 2025 through June 2026. All updates, corrections, posted on the 1st business day of each month, and future copies of the annual determination are available on the Department's website www.labor.ny.gov. Updated PDF copies of your schedule can be accessed by entering your assigned PRC# at the proper location on the website.

It is the responsibility of the contracting agency or its agent to annex and make part, the attached schedule, to the specifications for this project, when it is advertised for bids and /or to forward said schedules to the successful bidder(s), immediately upon receipt, in order to insure the proper payment of wages.

Please refer to the "General Provisions of Laws Covering Workers on Public Work Contracts" provided with this schedule, for the specific details relating to other responsibilities of the Department of Jurisdiction.

Upon completion or cancellation of this project, enter the required information and mail **OR** fax this form to the office shown at the bottom of this notice, **OR** fill out the electronic version via the NYSDOL website.

NOTICE OF COMPLETION / CANCELLATION OF PROJECT

Date Completed: _____ Date Cancelled: _____

Name & Title of Representative: _____

Phone: (518) 457-5589 Fax: (518) 485-1870
W. Averell Harriman State Office Campus, Bldg. 12, Room 130, Albany, NY 12240

General Provisions of Laws Covering Workers on Article 8 Public Work Contracts

Introduction

The Labor Law requires public work contractors and subcontractors to pay laborers, workers, or mechanics employed in the performance of a public work contract not less than the prevailing rate of wage and supplements (fringe benefits) in the locality where the work is performed.

Contractor Registry

Effective December 30, 2024 all contractors and subcontractors submitting bids or performing construction work on public work projects, or private projects covered by Article 8 of the Labor Law, are required to register with the New York State Department of Labor (NYSDOL) under Labor Law Section 220-i. To register, contractors and subcontractors must submit an application through NYSDOL's Contractor Registry portal which is available through the agency's Management System for Protecting Worker Rights (MPWR) https://mpwr-public.labor.ny.gov/en/login.

For additional information, please visit online.

Responsibilities of the Department of Jurisdiction

A Department of Jurisdiction (Contracting Agency) includes a state department, agency, board or commission: a county, city, town or village; a school district, board of education or board of cooperative educational services; a sewer, water, fire, improvement and other district corporation; a public benefit corporation; and a public authority awarding a public work contract.

The Department of Jurisdiction (Contracting Agency) awarding a public work contract MUST obtain a Prevailing Rate Schedule listing the hourly rates of wages and supplements due the workers to be employed on a public work project. This schedule may be obtained by completing and forwarding a "Request for wage and Supplement Information" form (PW 39) to the Bureau of Public Work. The Prevailing Rate Schedule MUST be included in the specifications for the contract to be awarded and is deemed part of the public work contract.

Upon the awarding of the contract, the law requires that the Department of Jurisdiction (Contracting Agency) furnish the following information to the Bureau: the name and address of the contractor, the date the contract was let and the approximate dollar value of the contract. To facilitate compliance with this provision of the Labor Law, a copy of the Department's "Notice of Contract Award" form (PW 16) is provided with the original Prevailing Rate Schedule.

The Department of Jurisdiction (Contracting Agency) is required to notify the Bureau of the completion or cancellation of any public work project. The Department's PW 200 form is provided for that purpose.

Both the PW 16 and PW 200 forms are available for completion online.

Hours

No laborer, worker, or mechanic in the employ of a contractor or subcontractor engaged in the performance of any public work project shall be permitted to work more than eight hours in any day or more than five days in any week, except in cases of extraordinary emergency. The contractor and the Department of Jurisdiction (Contracting Agency) may apply to the Bureau of Public Work for a dispensation permitting workers to work additional hours or days per week on a particular public work project.

Wages and Supplements

The wages and supplements to be paid and/or provided to laborers, workers, and mechanics employed on a public work project shall be not less than those listed in the current Prevailing Rate Schedule for the locality where the work is performed. If a prime contractor on a public work project has not been provided with a Prevailing Rate Schedule, the contractor must notify the Department of Jurisdiction (Contracting Agency) who in turn must request an original Prevailing Rate Schedule form the Bureau of Public Work. Requests may be submitted by: mail to NYSDOL, Bureau of Public Work, State Office Bldg. Campus, Bldg. 12, Rm. 130, Albany, NY 12226; Fax to Bureau of Public Work (518) 485-1870; or electronically at the NYSDOL website www.labor.ny.gov.

Upon receiving the original schedule, the Department of Jurisdiction (Contracting Agency) is REQUIRED to provide complete copies to all prime contractors who in turn MUST, by law, provide copies of all applicable county schedules to each subcontractor and obtain from each subcontractor, an affidavit certifying such schedules were received. If the original schedule expired, the contractor may obtain a copy of the new annual determination from the NYSDOL website www.labor.ny.gov.

The Commissioner of Labor makes an annual determination of the prevailing rates. This determination is in effect from July 1st through June 30th of the following year. The annual determination is available on the NYSDOL website

www.labor.ny.gov.

Payrolls and Payroll Records

Every contractor and subcontractor MUST keep original payrolls or transcripts subscribed and affirmed as true under penalty of perjury. As per Article 6 of the Labor law, contractors and subcontractors are required to establish, maintain, and preserve for not less than six (6) years, contemperaneous, true, and accurate payroll records. At a minimum, payrolls must show the following information for each person employed on a public work project: Name, Address, Last 4 Digits of Social Security Number, Classification(s) in which the worker was employed, Hourly wage rate(s) paid, Supplements paid or provided, and Daily and weekly number of hours worked in each classification.

The filing of payrolls to the Department of Jurisdiction is a condition of payment.Every contractor and subcontractor shall submit to the Department of Jurisdiction (Contracting Agency), within thirty (30) days after issuance of its first payroll and every thirty (30) days thereafter, a transcript of the original payrolls, subscribed and affirmed as true under penalty of perjury. The Department of Jurisdiction (Contracting Agency) shall collect, review for facial validity, and maintain such payrolls.

In addition, the Commissioner of Labor may require contractors to furnish, with ten (10) days of a request, payroll records sworn to as their validity and accuracy for public work and private work. Payroll records include, but are not limited to time cards, work description sheets, proof that supplements were provided, cancelled payroll checks and payrolls. Failure to provide the requested information within the allotted ten (10) days will result in the withholding of up to 25% of the contract, not to exceed $100,000.00. If the contractor or subcontractor does not maintain a place of business in New York State and the amount of the contract exceeds $25,000.00, payroll records and certifications must be kept on the project worksite.

The prime contractor is responsible for any underpayments of prevailing wages or supplements by any subcontractor.

All contractors or their subcontractors shall provide to their subcontractors a copy of the Prevailing Rate Schedule specified in the public work contract as well as any subsequently issued schedules. A failure to provide these schedules by a contractor or subcontractor is a violation of Article 8, Section 220-a of the Labor Law.

All subcontractors engaged by a public work project contractor or its subcontractor, upon receipt of the original schedule and any subsequently issued schedules, shall provide to such contractor a verified statement attesting that the subcontractor has received the Prevailing Rate Schedule and will pay or provide the applicable rates of wages and supplements specified therein. (See NYS Labor Laws, Article 8 . Section 220-a).

Determination of Prevailing Wage and Supplement Rate Updates Applicable to All Counties

The wages and supplements contained in the annual determination become effective July 1st whether or not the new determination has been received by a given contractor. Care should be taken to review the rates for obvious errors. Any corrections should be brought to the Department's attention immediately. It is the responsibility of the public work contractor to use the proper rates. If there is a question on the proper classification to be used, please call the district office located nearest the project. Any errors in the annual determination will be corrected and posted to the NYSDOL website on the first business day of each month. Contractors are responsible for paying these updated rates as well, retroactive to July 1st.

When you review the schedule for a particular occupation, your attention should be directed to the dates above the column of rates. These are the dates for which a given set of rates is effective. To the extent possible, the Department posts rates in its possession that cover periods of time beyond the July 1st to June 30th time frame covered by a particular annual determination. Rates that extend beyond that instant time period are informational ONLY and may be updated in future annual determinations that actually cover the then appropriate July 1st to June 30th time period.

Withholding of Payments

When a complaint is filed with the Commissioner of Labor alleging the failure of a contractor or subcontractor to pay or provide the prevailing wages or supplements, or when the Commissioner of Labor believes that unpaid wages or supplements may be due, payments on the public work contract shall be withheld from the prime contractor in a sufficient amount to satisfy the alleged unpaid wages and supplements, including interest and civil penalty, pending a final determination.

When the Bureau of Public Work finds that a contractor or subcontractor on a public work project failed to pay or provide the requisite prevailing wages or supplements, the Bureau is authorized by Sections 220-b and 235.2 of the Labor Law to so notify the financial officer of the Department of Jurisdiction (Contracting Agency) that awarded the public work contract. Such officer MUST then withhold or cause to be withheld from any payment due the prime contractor on account of such contract the amount indicated by the Bureau as sufficient to satisfy the unpaid wages and supplements, including interest and any civil penalty that may be assessed by the Commissioner of Labor. The withholding continues until there is a final determination of the underpayment by the Commissioner of Labor or by the court in the event a legal proceeding is instituted for review of the determination of the Commissioner of Labor.

The Department of Jurisdiction (Contracting Agency) shall comply with this order of the Commissioner of Labor or of the court with respect to the release of the funds so withheld.

Summary of Notice Posting Requirements

The current Prevailing Rate Schedule must be posted in a prominent and accessible place on the site of the public work project. The prevailing wage schedule must be encased in, or constructed of, materials capable of withstanding adverse weather conditions and be titled "PREVAILING RATE OF WAGES" in letters no smaller than two (2) inches by two (2) inches.

The "Public Work Project" notice must be posted at the beginning of the performance of every public work contract, on each job site.

Every employer providing workers. compensation insurance and disability benefits must post notices of such coverage in the format prescribed by the Workers. Compensation Board in a conspicuous place on the jobsite.

Every employer subject to the NYS Human Rights Law must conspicuously post at its offices, places of employment, or employment training centers, notices furnished by the State Division of Human Rights.

Employers liable for contributions under the Unemployment Insurance Law must conspicuously post on the jobsite notices furnished by the NYS Department of Labor.

Apprentices

Employees cannot be paid apprentice rates unless they are individually registered in a program registered with the NYS Commissioner of Labor. The allowable ratio of apprentices to journeyworkers in any craft classification can be no greater than the statewide building trade ratios promulgated by the Department of Labor and included with the Prevailing Rate Schedule. An employee listed on a payroll as an apprentice who is not registered as above or is performing work outside the classification of work for which the apprentice is indentured, must be paid the prevailing journeyworker's wage rate for the classification of work the employee is actually performing.

NYSDOL Labor Law, Article 8, Section 220-3, require that only apprentices individually registered with the NYS Department of Labor may be paid apprenticeship rates on a public work project. No other Federal or State Agency of office registers apprentices in New York State.

Persons wishing to verify the apprentice registration of any person must do so in writing by mail, to the NYSDOL Office of Employability Development / Apprenticeship Training, State Office Bldg. Campus, Bldg. 12, Albany, NY 12226 or by Fax to NYSDOL Apprenticeship Training (518) 457-7154. All requests for verification must include the name and social security number of the person for whom the information is requested.

The only conclusive proof of individual apprentice registration is written verification from the NYSDOL Apprenticeship Training Albany Central office. Neither Federal nor State Apprenticeship Training offices outside of Albany can provide conclusive registration information.

It should be noted that the existence of a registered apprenticeship program is not conclusive proof that any person is registered in that program. Furthermore, the existence or possession of wallet cards, identification cards, or copies of state forms is not conclusive proof of the registration of any person as an apprentice.

Interest and Penalties

In the event that an underpayment of wages and/or supplements is found:

- Interest shall be assessed at the rate then in effect as prescribed by the Superintendent of Banks pursuant to section 14-a of the Banking Law, per annum from the date of underpayment to the date restitution is made.
- A Civil Penalty may also be assessed, not to exceed 25% of the total of wages, supplements, and interest due.

Debarment

Any contractor or subcontractor and/or its successor shall be ineligible to submit a bid on or be awarded any public work contract or subcontract with any state, municipal corporation or public body for a period of five (5) years when:

- Two (2) willful determinations have been rendered against that contractor or subcontractor and/or its successor within any consecutive six (6) year period.
- There is any willful determination that involves the falsification of payroll records or the kickback of wages or supplements.

Criminal Sanctions

Willful violations of the Prevailing Wage Law (Article 8 of the Labor Law) may be a felony punishable by fine or imprisonment of up to 15 years, or both.

Discrimination

No employee or applicant for employment may be discriminated against on account of age, race, creed, color, national origin, sex, disability or marital status.

No contractor, subcontractor nor any person acting on its behalf, shall by reason of race, creed, color, disability, sex or national origin discriminate against any citizen of the State of New York who is qualified and available to perform the work to which the employment relates (NYS Labor Law, Article 8, Section 220-e(a)).

No contractor, subcontractor, nor any person acting on its behalf, shall in any manner, discriminate against or intimidate any employee on account of race, creed, color, disability, sex, or national origin (NYS Labor Law, Article 8, Section 220-e(b)).

The Human Rights Law also prohibits discrimination in employment because of age, marital status, or religion.

There may be deducted from the amount payable to the contractor under the contract a penalty of $50.00 for each calendar day during which such person was discriminated against or intimidated in violation of the provision of the contract (NYS Labor Law, Article 8, Section 220-e(c)).

The contract may be cancelled or terminated by the State or municipality. All monies due or to become due thereunder may be forfeited for a second or any subsequent violation of the terms or conditions of the anti-discrimination sections of the contract (NYS Labor Law, Article 8, Section 220-e(d)).

Every employer subject to the New York State Human Rights Law must conspicuously post at its offices, places of employment, or employment training centers notices furnished by the State Division of Human Rights.

Workers' Compensation

In accordance with Section 142 of the State Finance Law, the contractor shall maintain coverage during the life of the contract for the benefit of such employees as required by the provisions of the New York State Workers' Compensation Law.

A contractor who is awarded a public work contract must provide proof of workers' compensation coverage prior to being allowed to begin work.

The insurance policy must be issued by a company authorized to provide workers' compensation coverage in New York State. Proof of coverage must be on form C-105.2 (Certificate of Workers' Compensation Insurance) and must name this agency as a certificate holder.

If New York State coverage is added to an existing out-of-state policy, it can only be added to a policy from a company authorized to write workers' compensation coverage in this state. The coverage must be listed under item 3A of the information page.

The contractor must maintain proof that subcontractors doing work covered under this contract secured and maintained a workers' compensation policy for all employees working in New York State.

Every employer providing worker's compensation insurance and disability benefits must post notices of such coverage in the format prescribed by the Workers' Compensation Board in a conspicuous place on the jobsite.

Unemployment Insurance

Employers liable for contributions under the Unemployment Insurance Law must conspicuously post on the jobsite notices furnished by the New York State Department of Labor.

Kathy Hochul, Governor

Roberta Reardon, Commissioner

Design & Construction

Contract Awards
Contract Management 35th FL
Corning Tower
Empire State Plaza
Albany NY 12242

Schedule Year 2025 through 2026
Date Requested 05/01/2026
PRC# 2026012269

Location DOT Region 5, Erie County
Project ID# 47510
Project Type Provide Storage Building

Notice of Contract Award

New York State Labor Law, Article 8, Section 220.3a requires that certain information regarding the awarding of public work contracts, be furnished to the Commissioner of Labor. One "Notice of Contract Award" (PW 16, which may be photocopied), **MUST** be completed for **EACH** prime contractor on the above referenced project.

Upon notifying the successful bidder(s) of this contract, enter the required information and mail **OR** fax this form to the office shown at the bottom of this notice, **OR** fill out the electronic version via the NYSDOL website.

Contractor Information
All information must be supplied

Federal Employer Identification Number: _____

Name: _____

Address: _____

_____

City: _____ State: _____ Zip: _____

Amount of Contract: $_____

Approximate Starting Date: ____/____/____

Approximate Completion Date: ____/____/____

Contract Type:
[ ] (01) General Construction
[ ] (02) Heating/Ventilation
[ ] (03) Electrical
[ ] (04) Plumbing
[ ] (05) Other : _____

Phone: (518) 457-5589 Fax: (518) 485-1870
W. Averell Harriman State Office Campus, Bldg. 12, Room 130, Albany, NY 12226

Social Security Numbers on Certified Payrolls:

The Department of Labor is cognizant of the concerns of the potential for misuse or inadvertent disclosure of social security numbers. Identity theft is a growing problem and we are sympathetic to contractors' concern regarding inclusion of this information on payrolls if another identifier will suffice.

For these reasons, the substitution of the use of the last four digits of the social security number on certified payrolls submitted to contracting agencies on public work projects is now acceptable to the Department of Labor. This change does not affect the Department's ability to request and receive the entire social security number from employers during its public work/ prevailing wage investigations.

Construction Industry Fair Play Act: Required Posting for Labor Law Article 25-B § 861-d

Construction industry employers must post the "Construction Industry Fair Play Act" notice in a prominent and accessible place on the job site. Failure to post the notice can result in penalties of up to $1,500 for a first offense and up to $5,000 for a second offense. The posting is included as part of this wage schedule. Additional copies may be obtained from the NYS DOL website, https://dol.ny.gov/public-work-and-prevailing-wage
If you have any questions concerning the Fair Play Act, please call the State Labor Department toll-free at 1-866-435-1499 or email us at: dol.misclassified@labor.ny.gov .

Worker Notification: (Labor Law §220, paragraph a of subdivision 3-a)

Effective June 23, 2020

This provision is an addition to the existing wage rate law, Labor Law §220, paragraph a of subdivision 3-a. It requires contractors and subcontractors to provide written notice to all laborers, workers or mechanics of the *prevailing wage and supplement rate* for their particular job classification *on each pay stub**. It also requires contractors and subcontractors to *post a notice* at the beginning of the performance of every public work contract *on each job site* that includes the telephone number and address for the Department of Labor and a statement informing laborers, workers or mechanics of their right to contact the Department of Labor if he/she is not receiving the proper prevailing rate of wages and/or supplements for his/her job classification. The required notification will be provided with each wage schedule, may be downloaded from our website *www.labor.ny.gov* or be made available upon request by contacting the Bureau of Public Work at 518-457-5589. *In the event the required information will not fit on the pay stub, an accompanying sheet or attachment of the information will suffice.

(12.20)

To all State Departments, Agency Heads and Public Benefit Corporations
IMPORTANT NOTICE REGARDING PUBLIC WORK ENFORCEMENT FUND

Budget Policy & Reporting Manual

B-610

Public Work Enforcement Fund

effective date December 7, 2005

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1. Purpose and Scope:

This Item describes the Public Work Enforcement Fund (the Fund, PWEF) and its relevance to State agencies and public benefit corporations engaged in construction or reconstruction contracts, maintenance and repair, and announces the recently-enacted increase to the percentage of the dollar value of such contracts that must be deposited into the Fund. This item also describes the roles of the following entities with respect to the Fund:

- New York State Department of Labor (DOL),
- The Office of the State of Comptroller (OSC), and
- State agencies and public benefit corporations.

2. Background and Statutory References:

DOL uses the Fund to enforce the State's Labor Law as it relates to contracts for construction or reconstruction, maintenance and repair, as defined in subdivision two of Section 220 of the Labor Law. State agencies and public benefit corporations participating in such contracts are required to make payments to the Fund.

Chapter 511 of the Laws of 1995 (as amended by Chapter 513 of the Laws of 1997, Chapter 655 of the Laws of 1999, Chapter 376 of the Laws of 2003 and Chapter 407 of the Laws of 2005) established the Fund.

3. Procedures and Agency Responsibilities:

The Fund is supported by transfers and deposits based on the value of contracts for construction and reconstruction, maintenance and repair, as defined in subdivision two of Section 220 of the Labor Law, into which all State agencies and public benefit corporations enter.

Chapter 407 of the Laws of 2005 increased the amount required to be provided to this fund to .10 of one-percent of the total cost of each such contract, to be calculated at the time agencies or public benefit corporations enter into a new contract or if a contract is amended. The provisions of this bill became effective August 2, 2005.

To all State Departments, Agency Heads and Public Benefit Corporations
IMPORTANT NOTICE REGARDING PUBLIC WORK ENFORCEMENT FUND

OSC will report to DOL on all construction-related ("D") contracts approved during the month, including contract amendments, and then DOL will bill agencies the appropriate assessment monthly. An agency may then make a determination if any of the billed contracts are exempt and so note on the bill submitted back to DOL. For any instance where an agency is unsure if a contract is or is not exempt, they can call the Bureau of Public Work at the number noted below for a determination. Payment by check or journal voucher is due to DOL within thirty days from the date of the billing. DOL will verify the amounts and forward them to OSC for processing.

For those contracts which are not approved or administered by the Comptroller, monthly reports and payments for deposit into the Public Work Enforcement Fund must be provided to the Administrative Finance Bureau at the DOL within 30 days of the end of each month or on a payment schedule mutually agreed upon with DOL.

Reports should contain the following information:

- Name and billing address of State agency or public benefit corporation;
- State agency or public benefit corporation contact and phone number;
- Name and address of contractor receiving the award;
- Contract number and effective dates;
- Contract amount and PWEF assessment charge (if contract amount has been amended, reflect increase or decrease to original contract and the adjustment in the PWEF charge); and
- Brief description of the work to be performed under each contract.

Checks and Journal Vouchers, payable to the "New York State Department of Labor" should be sent to:

Department of Labor
Administrative Finance Bureau-PWEF Unit
Building 12, Room 464
State Office Campus
Albany, NY 12226

Any questions regarding billing should be directed to NYSDOL's Administrative Finance Bureau-PWEF Unit at (518) 457-3624 and any questions regarding Public Work Contracts should be directed to the Bureau of Public Work at (518) 457-5589.

NEW YORK STATE OF OPPORTUNITY. Department of Labor

Required Notice under Article 25-B of the Labor Law

Attention All Employees, Contractors and Subcontractors: You are Covered by the Construction Industry Fair Play Act

The law says that you are an employee unless:

- You are free from direction and control in performing your job, **and**
- You perform work that is not part of the usual work done by the business that hired you, **and**
- You have an independently established business.

Your employer cannot consider you to be an independent contractor unless all three of these facts apply to your work.

It is against the law for an employer to misclassify employees as independent contractors or pay employees off the books.

Employee Rights: If you are an employee, you are entitled to state and federal worker protections. These include:

- Unemployment Insurance benefits, if you are unemployed through no fault of your own, able to work, and otherwise qualified,
- Workers' compensation benefits for on-the-job injuries,
- Payment for wages earned, minimum wage, and overtime (under certain conditions),
- Prevailing wages on public work projects,
- The provisions of the National Labor Relations Act, and
- A safe work environment.

It is a violation of this law for employers to retaliate against anyone who asserts their rights under the law. Retaliation subjects an employer to civil penalties, a private lawsuit or both.

Independent Contractors: If you are an independent contractor**, you must pay all taxes and Unemployment Insurance contributions required by New York State and Federal Law.**

Penalties for paying workers off the books or improperly treating employees as independent contractors:

• **Civil Penalty**	First offense: Up to $2,500 per employee Subsequent offense(s): Up to $5,000 per employee
• **Criminal Penalty**	First offense: Misdemeanor - up to 30 days in jail, up to a $25,000 fine and debarment from performing public work for up to one year. Subsequent offense(s): Misdemeanor - up to 60 days in jail or up to a $50,000 fine and debarment from performing public work for up to 5 years.

If you have questions about your employment status or believe that your employer may have violated your rights and you want to file a complaint, call the Department of Labor at (866) 435-1499 or send an email to dol.misclassified@labor.ny.gov. All complaints of fraud and violations are taken seriously. You can remain anonymous.

Employer Name:

IA 999 (09/16)

WE ARE YOUR DOL

NEW YORK STATE Department of Labor

New York State Department of Labor
Bureau of Public Work

Attention Employees

THIS IS A:

PUBLIC WORK PROJECT

If you are employed on this project as a **worker, laborer, or mechanic** you are entitled to receive the **prevailing wage and supplements rate** for the classification at which you are working.

Your pay stub and wage notice received upon hire must clearly state your wage rate and supplement rate.

Chapter 629 of the Labor Laws of 2007:

These wages are set by law and must be posted at the work site. They can also be found at: https://dol.ny.gov/bureau-public-work

If you feel that you have not received proper wages or benefits, please call our nearest office.*

Albany	(518) 457-2744	Patchogue	(631) 687-4882
Binghamton	(607) 721-8005	Rochester	(585) 258-4505
Buffalo	(716) 847-7159	Syracuse	(315) 428-4056
Garden City	(516) 228-3915	Utica	(315) 793-2314
New York City	(212) 932-2419	White Plains	(914) 997-9507
Newburgh	(845) 568-5287		

* For New York City government agency construction projects, please contact the Office of the NYC Comptroller at (212) 669-4443, or www.comptroller.nyc.gov – click on Bureau of Labor Law.

Contractor Name: _____

Project Location: _____

Requirements for OSHA 10 Compliance

Article 8 §220-h requires that when the advertised specifications, for every contract for public work, is $250,000.00 or more the contract must contain a provision requiring that every worker employed in the performance of a public work contract shall be certified as having completed an OSHA 10 safety training course. The clear intent of this provision is to require that all employees of public work contractors, required to be paid prevailing rates, receive such training “prior to the performing any work on the project.”

The Bureau will enforce the statute as follows:

All contractors and sub contractors must attach a copy of proof of completion of the OSHA 10 course to the first certified payroll submitted to the contracting agency and on each succeeding payroll where any new or additional employee is first listed.

Proof of completion may include but is not limited to:

- Copies of bona fide course completion card (*Note: Completion cards do not have an expiration date.)*
- Training roster, attendance record of other documentation from the certified trainer pending the issuance of the card.
- Other valid proof

**A certification by the employer attesting that all employees have completed such a course is not sufficient proof that the course has been completed.

Any questions regarding this statute may be directed to the New York State Department of Labor, Bureau of Public Work at 518-457-5589.

WICKS

Public work projects are subject to the Wicks Law requiring separate specifications and bidding for the plumbing, heating and electrical work, when the total project's threshold is $3 million in Bronx, Kings, New York, Queens and, Richmond counties; $1.5 million in Nassau, Suffolk and Westchester counties; and $500,000 in all other counties.

For projects below the monetary threshold, bidders must submit a sealed list naming each subcontractor for the plumbing, HVAC and electrical and the amount to be paid to each. The list may not be changed unless the public owner finds a legitimate construction need, including a change in specifications or costs or the use of a Project Labor Agreement (PLA), and must be open to public inspection.

Allows the state and local agencies and authorities to waive the Wicks Law and use a PLA if it will provide the best work at the lowest possible price. If a PLA is used, all contractors shall participate in apprentice training programs in the trades of work it employs that have been approved by the Department of Labor (DOL) for not less than three years. They shall also have at least one graduate in the last three years and use affirmative efforts to retain minority apprentices. PLA's would be exempt from Wicks, but deemed to be public work subject to prevailing wage enforcement.

The Commissioner of Labor shall have the power to enforce separate specification requirement s on projects, and may issue stop-bid orders against public owners for non-compliance.

Other new monetary thresholds, and similar sealed bidding for non-Wicks projects, would apply to certain public authorities including municipal housing authorities, NYC Construction Fund, Yonkers Educational Construction Fund, NYC Municipal Water Finance Authority, Buffalo Municipal Water Finance Authority, Westchester County Health Care Association, Nassau County Health Care Corp., Clifton-Fine Health Care Corp., Erie County Medical Center Corp., NYC Solid Waste Management Facilities, and the Dormitory Authority.

Contractors must pay subcontractors within a 7 days period.

(07.19)

Introduction to the Prevailing Rate Schedule

Information About Prevailing Rate Schedule

This information is provided to assist you in the interpretation of particular requirements for each classification of worker contained in the attached Schedule of Prevailing Rates.

Classification

It is the duty of the Commissioner of Labor to make the proper classification of workers taking into account whether the work is heavy and highway, building, sewer and water, tunnel work, or residential, and to make a determination of wages and supplements to be paid or provided. It is the responsibility of the public work contractor to use the proper rate. If there is a question on the proper classification to be used, please call the district office located nearest the project. District office locations and phone numbers are listed below.
Prevailing Wage Schedules are issued separately for "General Construction Projects" and "Residential Construction Projects" on a county-by-county basis.

General Construction Rates apply to projects such as: Buildings, Heavy & Highway, and Tunnel and Water & Sewer rates.
Residential Construction Rates generally apply to construction, reconstruction, repair, alteration, or demolition of one family, two family, row housing, or rental type units intended for residential use.
Some rates listed in the Residential Construction Rate Schedule have a very limited applicability listed along with the rate. Rates for occupations or locations not shown on the residential schedule must be obtained from the General Construction Rate Schedule. Please contact the local Bureau of Public Work office before using Residential Rate Schedules, to ensure that the project meets the required criteria.

*Contractor Registry (LL 220-I): Effective December 30th, 2024
Labor Law Section 220-i(6) prohibits contractors from bidding on public work and prohibits both contractors and subcontractors from commencing work on private and public projects subject to prevailing wage requirements. This section requires contractors to submit their Certificate of Registration with their bid materials. Each Certificate of Registration will have a unique registration number. Failure to provide proof of registration, as required by Labor Law Section 220-i, as a minimum qualification will result in the bidder being deemed non-responsive. There is a public database of registered contractors and subcontractors available online at data.ny.gov to confirm registration validity. For additional information on how to register and the requirements, visit https://dol.ny.gov/public-work-contractor-and-subcontractor-registry-landing

*Electronic Certified Payroll (LL 220-J): Effective December 31st, 2025
Effective December 31, 2025, all contractors and subcontractors who perform public work, or covered private work subject to the prevailing wage, will be required to submit certified payrolls electronically to the Bureau of Public Work and Prevailing Wage Enforcement. Additional information about the electronic certified payroll submission system will be made available on the Department's Website at https://dol.ny.gov/Electronic-Payroll

Payrolls and Payroll Records

Every contractor and subcontractor MUST keep original payrolls or transcripts subscribed and affirmed as true under penalty of perjury. Payrolls must be maintained for at least three (3) years from the projects date of completion. Additionally, as per Article 6 of the Labor Law, contractors and subcontractors are required to establish, maintain, and preserve for not less that six (6) years, contemporaneous, true, and accurate payroll records.

At a minimum, payrolls must show the following information for each person employed on a public work project: Name; Address, Last 4 Digits of Social Security number, Classification(s) in which the worker was employed, Hourly wage rate(s) paid, Supplements paid or provided, and Daily and weekly number of hours worked in each classification.

Payroll records and transcripts are required to be kept on site during all the time that work under that contract is being performed.

NOTE: *For more detailed information regarding Article 9 prevailing wage contracts, please refer to "General Provisions of Laws Covering Workers on Article 9 Public Work Building Service Contracts".*

If you have any questions concerning the attached schedule or would like additional information, please write to:

New York State Department of Labor
Bureau of Public Work
State Office Campus, Bldg. 12
Albany, NY 12240

OR

Contact the nearest BUREAU of PUBLIC WORK District Office

District Office Locations:	Telephone #	FAX #
Bureau of Public Work - Albany	518-457-2744	518-485-0240
Bureau of Public Work - Binghamton	607-721-8005	607-721-8004

Bureau of Public Work - Buffalo	716-847-7159	716-847-7650
Bureau of Public Work - Garden City	516-228-3915	516-794-3518
Bureau of Public Work - Newburgh	845-568-5287	845-568-5332
Bureau of Public Work - New York City	212-932-2419	212-775-3579
Bureau of Public Work - Patchogue	631-687-4882	631-687-4902
Bureau of Public Work - Rochester	585-258-4505	585-258-4708
Bureau of Public Work - Syracuse	315-428-4056	315-428-4671
Bureau of Public Work - Utica	315-793-2314	315-793-2514
Bureau of Public Work - White Plains	914-997-9507	914-997-9523
Bureau of Public Work - Central Office	518-457-5589	518-485-1870

Paid Holidays

Paid Holidays are days for which an eligible employee receives a regular day's pay, but is not required to perform work. If an employee works on a day listed as a paid holiday, this remuneration is in addition to payment of the required prevailing rate for the work actually performed.

Overtime

At a minimum, all work performed on a public work project in excess of eight hours in any one day or more than five days in any workweek is overtime. However, the specific overtime requirements for each trade or occupation on a public work project may differ. Specific overtime requirements for each trade or occupation are contained in the prevailing rate schedules.

Overtime holiday pay is the premium pay that is required for work performed on specified holidays. It is only required where the employee actually performs work on such holidays.

The applicable holidays are listed under HOLIDAYS: OVERTIME. The required rate of pay for these covered holidays can be found in the OVERTIME PAY section listings for each classification.

Supplemental Benefits

Particular attention should be given to the supplemental benefit requirements. Although in most cases the payment or provision of supplements is straight time for all hours worked, some classifications require the payment or provision of supplements, or a portion of the supplements, to be paid or provided at a premium rate for premium hours worked. Supplements may also be required to be paid or provided on paid holidays, regardless of whether the day is worked. The Overtime Codes and Notes listed on the particular wage classification will indicate these conditions as required.

Effective Dates

When you review the schedule for a particular occupation, your attention should be directed to the dates above the column of rates. These are the dates for which a given set of rates is effective. The rate listed is valid until the next effective rate change or until the new annual determination which takes effect on July 1 of each year.

All contractors and subcontractors are required to pay the current prevailing rates of wages and supplements. If you have any questions please contact the Bureau of Public Work or visit the New York State Department of Labor website (www.labor.ny.gov) for current wage rate information.

Shift Work

If the timeline of the contract requires shift work be performed to meet deadlines, the BPWE will enforce the shift work rate as the required rate on the project whether or not shift work is specifically addressed in the contract.

Paid Prenatal Leave

Every employer shall be required to provide to its employees twenty hours of paid prenatal personal leave during any fifty-two week calendar period. Paid prenatal personal leave shall mean leave taken for the health care services received by an employee during their pregnancy or related to such pregnancy, including physical examinations, medical procedures, monitoring and testing, and discussions with a healthcare provider related to the pregnancy. Paid prenatal personal leave may be taken in hourly increments. Benefits for paid prenatal personal leave shall be paid in hourly installments. Employees shall receive compensation at the employee's regular rate of pay, or the applicable minimum wage established by the labor law, whichever is greater, for the use of Paid Prenatal leave.

Apprentice Training Ratios

The following are the allowable ratios of registered Apprentices to Journey-workers.

For example, the ratio 1:1,1:3 indicates the allowable initial ratio is one Apprentice to one Journeyworker. The Journeyworker must be in place on the project before an Apprentice is allowed. Then three additional Journeyworkers are needed before a second Apprentice is allowed. The last ratio repeats indefinitely. Therefore, three more Journeyworkers must be present before a third Apprentice can be hired, and so on.

Please call Apprentice Training Central Office at (518) 457-6820 if you have any questions.

Title (Trade)	Ratio
Boilermaker (Construction)	1:1,1:4
Boilermaker (Shop)	1:1,1:3
Carpenter (Bldg.,H&H, Pile Driver/Dockbuilder)	1:1,1:4
Carpenter (Residential)	1:1,1:3
Electrical (Outside) Lineman	1:1,1:2
Electrician (Inside)	1:1,1:3
Elevator/Escalator Construction & Modernizer	1:1,1:2
Glazier	1:1,1:3
Insulation & Asbestos Worker	1:1,1:3
Iron Worker	1:1,1:4
Laborer	1:1,1:3
Mason	1:1,1:4
Millwright	1:1,1:4
Op Engineer	1:1,1:5
Painter	1:1,1:3
Plumber & Steamfitter	1:1,1:3
Roofer	1:1,1:2
Sheet Metal Worker	1:1,1:3
Sprinkler Fitter	1:1,1:2

If you have any questions concerning the attached schedule or would like additional information, please contact the nearest BUREAU of PUBLIC WORK District Office or write to:

New York State Department of Labor
Bureau of Public Work
State Office Campus, Bldg. 12
Albany, NY 12226

District Office Locations:	Telephone #	FAX #
Bureau of Public Work - Albany	518-457-2744	518-485-0240
Bureau of Public Work - Binghamton	607-721-8005	607-721-8004
Bureau of Public Work - Buffalo	716-847-7159	716-847-7650
Bureau of Public Work - Garden City	516-228-3915	516-794-3518
Bureau of Public Work - Newburgh	845-568-5287	845-568-5332
Bureau of Public Work - New York City	212-932-2419	212-775-3579
Bureau of Public Work - Patchogue	631-687-4882	631-687-4902
Bureau of Public Work - Rochester	585-258-4505	585-258-4708
Bureau of Public Work - Syracuse	315-428-4056	315-428-4671
Bureau of Public Work - Utica	315-793-2314	315-793-2514
Bureau of Public Work - White Plains	914-997-9507	914-997-9523
Bureau of Public Work - Central Office	518-457-5589	518-485-1870

Erie County General Construction

Boilermaker — 05/01/2026

JOB DESCRIPTION Boilermaker **DISTRICT** 12

ENTIRE COUNTIES
Allegany, Cattaraugus, Chautauqua, Chemung, Erie, Genesee, Livingston, Monroe, Niagara, Ontario, Orleans, Schuyler, Steuben, Wayne, Wyoming, Yates

WAGES

Per hour:	07/01/2025	01/01/2026
Boilermaker	$ 39.35	$ 41.50

The wage rate will be 90% of the above for Maintenance work on boilers less than 100,000 pph.

SUPPLEMENTAL BENEFITS

Per hour:	$ 33.52*	$ 33.87**

*NOTE: $32.03 of this amount is for every Hour "Paid"
**NOTE: $32.38 of this amount is for every Hour "Paid"

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 15, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES
Terms at 6 Months

1st	2nd	3rd	4th	5th	6th	7th	8th
65%	65%	70%	75%	80%	85%	90%	95%

Supplemental Benefits per hour:

All Terms	$ 33.52**	$ 33.87***

**NOTE: $32.03 of this amount is for every Hour "Paid"
***NOTE: $32.38 of this amount is for every Hour "Paid"

12-7

Broadband — 05/01/2026

JOB DESCRIPTION Broadband **DISTRICT** 4

ENTIRE COUNTIES
Albany, Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Dutchess, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Orleans, Oswego, Otsego, Rensselaer, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Wyoming, Yates

PARTIAL COUNTIES
Orange: Only in the Village of Greenwood Lake, Village of Highland Falls, Town of Tuxedo, and Town of Patterson

WAGES
NOTE: Applies to all public work and covered private projects, including those receiving ConnectAll funding subject to New York State Labor Law §224-E, solicited on or after July 1,2025. For all other projects solicited prior to July 1,2025 please see LINEMAN ELECTRICIAN-TELEDATA

Per Hour:	07/01/2025	08/04/2025
Field Tech Install/Repair	$ 51.31	$ 52.85

For outside work (excluding installation on building construction/alteration/renovation projects), stopping at first point of attachment (demarcation), installing/maintaining/repairing broadband internet service.

"Broadband", "Broadband Service", or "Broadband Internet" means mass-market retail service by wire or radio that provides the capability to transmit data to and receive data from all or substantially all internet endpoints, including any capabilities that are incidental to and enable the operation of the communications service, but excluding dial-up internet access service.

Note: EXLCUDES work within ten (10) feet of High Voltage (600 Volts and over) transmission lines for this work, please see LINEMAN

SUPPLEMENTAL BENEFITS
Per Hour:
$ 23.24

OVERTIME PAY
See (B, K, *R) on OVERTIME PAGE
* Two and one half times the hourly rate after the 8th hour

HOLIDAY
Paid: See (5, 6, 7, 11, 12) on HOLIDAY PAGE
Overtime: See (5, 6, 7, 11, 12) on HOLIDAY PAGE

4-CWA-Dist2

Carpenter - Building — 05/01/2026

JOB DESCRIPTION Carpenter - Building **DISTRICT** 12

ENTIRE COUNTIES
Erie

PARTIAL COUNTIES
Cattaraugus: Townships of Persia and Perrysburg

WAGES

Per hour:	07/01/2025	07/01/2026
Building:		Additional $4.00/Hr
Carpenter	$ 34.97	
Certified Welder	35.97	
Hazardous Waste Worker	36.47	
Diver-Wet Day***	61.25	
Diver-Dry Day	35.97	

Hazardous Waste Worker: Hazardous sites requiring personal protective equipment.

*** Diver rate applies to all hours worked on the day of dive.

Depth pay for divers:	0' to 80'	no additional fee
	81' to 100'	additional $0.50 per foot
	101' to 150'	additional $0.75 per foot
	151' to 200'	additional $1.25 per foot
Penetration pay:	0' to 50'	no additional fee
	51' to 100'	additional $0.75 per foot
	101'to 200'	additional $1.00 per foot

SHIFT WORK
On Contracting Agency mandated shift work, the following rates will be applicable:
1st Shift - Regular Rate
2nd Shift - Premium of 7% of base wage per hour
3rd Shift - Premium of 14% of base wage per hour
Shift work shall be defined as implementing at least two (2) shifts in a twenty-four (24) consecutive hour period. Shift work must be for a minimum of three (3) consecutive days.

SUPPLEMENTAL BENEFITS
Per hour worked:

Carpenter(s)	$ 29.66
Diver(s)	29.66

OVERTIME PAY
See (B, E, E2, Q) on OVERTIME PAGE

HOLIDAY
Overtime: See (5, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wages per hour:
One year terms at the following percentage of Journeyman's base wage:

Carpenter Apprentices:

1st	2nd	3rd	4th
65%	70%	75%	80%

Supplemental Benefits per hour worked:

1st	2nd	3rd	4th
$12.80	$12.80	$15.40	$15.40

12-276B-Cat

Carpenter - Building / Heavy&Highway — 05/01/2026

JOB DESCRIPTION Carpenter - Building / Heavy&Highway **DISTRICT** 2

ENTIRE COUNTIES
Albany, Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Orleans, Oswego, Otsego, Rensselaer, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Wyoming, Yates

PARTIAL COUNTIES
Orange: The area lying on Northern side of Orange County demarcated by a line drawn from the Bear Mountain Bridge continuing west to the Bear Mountain Circle, continue North on 9W to the town of Cornwall where County Road 107 (also known as Quaker Rd) crosses under 9W, then east on County Road 107 to Route 32, then north on Route 32 to Orrs Mills Rd, then west on Orrs Mills Rd to Route 94, continue west and south on Route 94 to the Town of Chester, to the intersection of Kings Highway, continue south on Kings Highway to Bellvale Rd, west on Bellvale Rd to Bellvale Lakes Rd, then south on Bellvale Lakes Rd to Kain Rd, southeast on Kain Rd to Route 17A, then north and southeast along Route 17A to Route 210, then follow Route 210 to NJ Border.

WAGES

Wages per hour:	07/01/2025	07/01/2026 Additional	07/01/2027 Additional
Carpenter - ONLY for Artificial Turf/Synthetic Sport Surface	$ 37.94	$ 2.25*	$ 2.25*

* To be allocated at a later date.

Note - Does not include the operation of equipment. Please see Operating Engineers rates.

SUPPLEMENTAL BENEFITS
Per hour worked:

Journeyworker	$ 27.34

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (5) on HOLIDAY PAGE
Overtime: See (5, 6, 16) on HOLIDAY PAGE
Notes:
When a holiday falls upon a Saturday, it shall be observed on the preceding Friday. Whan a holiday falls upon a Sunday, it shall be observed on the following Monday.
An employee taking an unexcused day off the regularly scheduled day before or after a paid Holiday shall not receive Holiday pay.

REGISTERED APPRENTICES
Wages per hour (1300 hour terms at the following percentage of Journeyworker's wage):

1st	2nd	3rd	4th
65%	70%	75%	80%

Supplemental Benefits per hour worked:

$19.10	$19.69	$21.83	$22.42

2-42AtSS

Carpenter - Heavy&Highway — 05/01/2026

JOB DESCRIPTION Carpenter - Heavy&Highway **DISTRICT** 12

ENTIRE COUNTIES
Erie

WAGES

Per hour:	07/01/2025	07/01/2026 Additional
Carpenter	$ 43.08	$2.65
Certified Welder	48.08	
Hazardous Waste Worker	45.58	
Pile Driver	43.08	
Pile Driver Welder	48.08	

Piledriver Hazardous W W	45.58
Diver-Wet Day	68.08
Diver-Dry Day & Tender	44.08
Effluent & Slurry Diver-Wet Day	102.12
Effluent & Slurry Diver-Dry Day	66.12

NOTE ADDITIONAL AMOUNTS PAID FOR THE FOLLOWING WORK LISTED (per hour worked):
- State designated hazardous site, requiring protective gear shall be an additional $2.50 per hour.
- Certified Welders when required to perform welding work will receive an additional $2.50 per hour.

** Diver rate applies to all hours worked on the day of dive.

Depth pay for divers:	0' to 50'	no additional fee
	51'to 100'	additional $0.50 per foot
	101' to 150'	additional $0.75 per foot
	151' to 200'	additional $1.25 per foot
	201' and deeper	additional $1.50 per foot
Penetration pay:	0' to 50'	no additional fee
	51' to 100'	additional $0.75 per foot
	101' to 200'	additional $1.00 per foot
	201' and Deeper	additional $1.25 per foot

SUPPLEMENTAL BENEFITS
Per hour worked:

Carpenter(s)	$ 32.85
Pile Driver(s)	32.85
Diver(s)	32.85

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 6) on HOLIDAY PAGE
In the event a Holiday falls on a Saturday, the Friday before will be observed as a Holiday. If a Holiday falls on a Sunday, then Monday will be observed as a Holiday. Employee must work scheduled workday before and after the Holiday.

REGISTERED APPRENTICES
Wages per hour:
One year terms at the following percentage of Journeyman's wage:
Carpenter Apprentice:

1st	2nd	3rd	4th
65%	70%	75%	80%

Pile Driver Apprentice (1300hour terms at percentage of Pile Driver Rate)

1st	2nd	3rd	4th
65%	70%	75%	80%

Supplemental benefits Carpenter/Pile Driver per hour worked:

1st	2nd	3rd	4th
$ 19.95	$ 20.61	$ 22.83	$ 23.49

12-276HH-Erie

Electrician — 05/01/2026

JOB DESCRIPTION Electrician **DISTRICT** 3

ENTIRE COUNTIES
Erie

PARTIAL COUNTIES
Cattaraugus: Only the Townships of Ashford, East Otto, Ellicottville, Farmersville, Freedom, Franklinville, Lyndon, Machias, Mansfield, New Albion, Otto, Perrysburg, Persia and Yorkshire.
Genesee: Only the Townships of Alabama, Alexander, Darien, Oakfield,Pembroke and that portion of the Towns of Batavia and Elba that are west of Little Tonawanda Creek; Tonawanda Creek; the City limits of Batavia (in effect prior to Feb. 1, 1970) and State Highway 98 north of the City of Batavia, then north on Highway 98 to the Orleans County line.
Wyoming: Only the Townships of Arcade, Attica, Bennington, Eagle, Java, Orangeville, Sheldon and Wethersfield.

WAGES

Per hour:	07/01/2025	06/01/2026 Additional	05/31/2027 Additional
Electrician*	$ 44.50	$4.50	$5.50

* Includes teledata work

Additional $0.50/hr in shafts over 25 ft. deep and in underground tunnels over 75 ft. long.
Additional $0.75/hr for work on toothpicks, structural steel, temporary platforms, swinging scaffolds, boatswain chairs, smoke stacks or water towers 30 ft above the floor or for work on rolling scaffolds and ladders over 50 ft.
Additional $1.50/hr for Cable Splicers on such work as lead, and shielded cable and splices or terminations on cable 5KV and above.
Additional $1.00/hr for Hot work (Atomic plants).
Additional $2.00/hr for work on radio, TV, light towers and floating platforms or climbing ladders in excess of 100 ft. high.

SHIFT WORK
When shift work is mandated either in the job specification or by the contracting agency the following premiums apply:
17.3% for work from 4:30PM - 1:00AM
31.4% for work from 12:30AM - 9:00AM

SUPPLEMENTAL BENEFITS
Per hour:

$ 33.38*

* NOTE - add 6% of the posted straight time or applicable premium wage rate.

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wages per hour:

Hour terms at the following wages:

0 to 1000	1000 to 2000	2000 to 3500	3500 to 5000	5000 to 6500	6500 to 8200
$ 22.25	$ 26.70	$ 28.95	$ 31.15	$ 33.40	$ 37.85

Supplemental benefits per hour:

0 to 2000	2000 to 6500	6500 to 8200
$ 15.05*	$ 26.40*	$ 33.38*

* NOTE - add 6% of the posted straight time or applicable premium wage rate.

3-41

Elevator Constructor — 05/01/2026

JOB DESCRIPTION Elevator Constructor **DISTRICT** 3

ENTIRE COUNTIES
Allegany, Cattaraugus, Chautauqua, Erie, Genesee, Niagara, Orleans, Wyoming

WAGES

Per hour:	07/01/2025
Elevator Constructor	$ 62.39
Helper	43.67

SUPPLEMENTAL BENEFITS
Per hour:

$ 38.44

Note - add 6% of regular hourly rate for all hours worked.

OVERTIME PAY
See (D, O) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 6, 15, 16) on HOLIDAY PAGE
Overtime: See (5, 6, 15, 16) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wages per hour:

One year (1,700 hour each) terms at the following percentage of Journeyman's wage:

1st*	2nd	3rd	4th
55%	65%	70%	80%

*Note - 0-6 months of the 1st year term is paid at 50% of Journeyman's wage with no Supplemental benefits.

Supplemental benefits per hour:

$ 38.44

Note - add 6% of regular hourly rate for all hours worked.

3-14

Glazier 05/01/2026

JOB DESCRIPTION Glazier **DISTRICT** 3

ENTIRE COUNTIES
Allegany, Cattaraugus, Chautauqua, Erie, Genesee, Niagara, Orleans, Wyoming

WAGES
Per hour: 07/01/2025

Glazier	$ 34.68
Working off Suspended Scaffold (Swing Stage)	36.68
Maintenance	22.45*

* Note - This rate to be used only for all repair and replacement work such as glass breakage, glass replacement, door repair and board ups.

SUPPLEMENTAL BENEFITS
Per hour:

Journeymen Glazier	$ 28.79
Maintenance	18.66

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE for Glazier and Glazier Apprentice
Paid: See (5, 6) on HOLIDAY PAGE for Maintenance
Overtime: See (5, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wages per hour:

Glazier: 1000 hour terms at the following percentage of Journeyman's wage:

1st	2nd	3rd	4th	5th	6th	7th	8th
$ 20.50	$ 21.50	$ 22.50	$ 23.50	$ 24.50	$ 25.50	$ 26.50	$ 27.50

Supplemental benefits per hour:

1st & 2nd terms	$ 8.65
3rd & 4th terms	11.15
5th & 6th terms	12.65
7th & 8th terms	14.15

3-660

Insulator - Heat & Frost 05/01/2026

JOB DESCRIPTION Insulator - Heat & Frost **DISTRICT** 3

ENTIRE COUNTIES
Allegany, Cattaraugus, Chautauqua, Erie, Niagara, Wyoming

PARTIAL COUNTIES
Genesee: Only the Townships of Alabama, Alexander, Darien, Oakfield and Pembroke.

WAGES
Per Hour: 07/01/2025

Heat & Frost Insulator	$ 37.65

SUPPLEMENTAL BENEFITS
Per hour:

$ 30.79

OVERTIME PAY
See (B, *E, **Q) on OVERTIME PAGE
* Note - Double time after 10 hours on Saturday.

** Note - Triple time on Labor Day if WORKED.

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wages per hour:

One year terms at the following percentage of Journeyman's wage:

1st	2nd	3rd	4th
60%	70%	75%	80%

Supplemental Benefits per hour:

1st	$ 9.51
2nd	13.09
3rd	30.79
4th	30.79

Ironworker 05/01/2026

JOB DESCRIPTION Ironworker **DISTRICT** 3

ENTIRE COUNTIES
Cattaraugus, Chautauqua

PARTIAL COUNTIES
Allegany: Entire county except the Towns of Birdsall, Burns and Grove.
Erie: All except the Town of Grand Island north of Whitehaven Road.
Genesee: Only the Townships of Alabama, Alexander, Darien and Pembroke
Steuben: Only the Townships of Canisteo, Freemont, Greenwood,Hartsville, Hornell, Hornellsville, Howard, Jasper, Troupsburg and West Union
Wyoming: Only the Townships of Arcade, Attica, Bennington, Eagle,Gainsville, Java, Orangeville, Pike, Sheldon, Warsaw and Wethersfield.

WAGES
Per hour: 07/01/2025

Structural	$ 36.76
Ornamental	36.76
Layout	36.76
Rodmen	36.76
Reinforcing	36.76
Welders	36.76
Riggers & Mach. Movers	36.76
Curtain Wall Erector	36.76
Window Erector	34.31
Fence Erector	35.21

SHIFT WORK
When shift work is mandated either in the job specification or by the contracting agency the following premiums apply:
10% for second shift work from 2:00PM - 7:00PM
15% for third shift work from 7:00PM - 12:00AM

When a single irregular shift is worked outside the standard workday with the start times based on second and third shifts, a 10% premium on hours worked applies.

SUPPLEMENTAL BENEFITS
Per hour:

Fence Erectors	$ 32.62
All others	34.12

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wages per hour:

One year terms at the following wage:

1st	2nd	3rd	4th
$ 21.50	$ 23.50	$ 25.50	$ 27.50

Supplemental benefits per hour:

1st	2nd	3rd	4th
$ 15.57	$ 25.88	$ 27.35	$ 28.83

3-6

Ironworker — 05/01/2026

JOB DESCRIPTION Ironworker **DISTRICT** 3

ENTIRE COUNTIES
Niagara

PARTIAL COUNTIES
Erie: Only that portion of the Township of Grand Island north of Whitehaven Road.
Orleans: Only the Townships of Ridgeway, Shelby and Yates.

WAGES
Per hour: 07/01/2025

Structural	$ 36.25
Ornamental	36.25
Reinforcing	36.25
Rigger & Mach. Mover	36.25
Pre-Engineered	36.25
Fence Erector	36.25
Pre-Cast Erector	36.25
Welder	36.25
Window Erector	36.25

SHIFT WORK
When shift work is mandated either in the job specification or by the contracting agency the following premiums apply:
10% for second shift work from 2:00PM - 7:00PM
15% for third shift work from 7:00PM - 12:00AM

When a single irregular shift is worked outside the standard workday with the start times based on second and third shifts, a 10% premium on hours worked applies.

SUPPLEMENTAL BENEFITS
Per hour:
$ 34.94

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wages per hour:

One year terms at the following wage:

1st term	$ 21.50
2nd term	23.50
3rd term	25.50
4th term	27.50

Supplemental benefits per hour:

1st term	$ 13.78
2nd term	21.87
3rd term	23.02
4th term	24.18

3-9

Laborer - Building — 05/01/2026

JOB DESCRIPTION Laborer - Building **DISTRICT** 3

ENTIRE COUNTIES
Erie

PARTIAL COUNTIES
Cattaraugus: Only the Townships of Perrysburg and the Village Gowanda.

WAGES
CLASS A: Basic, Safety Man, Flagman, Tool Room Man, Nurseryman, Demolition Worker, Top Man, Wrecker, IBC Barriers Except on Structures, Guard Rail, Asphalt Shovelers, Foundation Laborer over 8' in Depth, Hod Carriers, Plaster Tender, Plaster Scaffold Builder, Pneumatic Gas, Electric Tool Operator including all forms of Busters, Jackhammers and Chipping Guns, Steel Burners.

CLASS B: Mortar Mixer, Asphalt Smoothers, Pneumatic Gas, Electric Tool Operator including all forms of Busters, Jackhammers and Chipping Guns over 8' in depth.

CLASS C: Worker on any Swing Scaffold, Blaster, Plumbing Laborer, Wagon Drill Operator, Bottomman (caisson or cofferdam), Laser Setter, Asphalt Rakers, Asphalt Screed Man.

CLASS D: Stone Cutter, Curb Setter and Flag Layer.

CLASS E: Asbestos Removal, Deleader.

CLASS F: Hazardous Waste Worker.

*For wearing of replaceable cartridge respirator in excess of 2 hours per day - add $1.00 to Group A rate.

Per hour:	07/01/2025	07/01/2026
Building Laborer:		Additional
CLASS A	$ 32.83	$1.75
CLASS B	33.00	$1.75
CLASS C	33.11	$1.75
CLASS D	33.58	$1.75
CLASS E	34.33	$1.75
CLASS F	34.83	$1.75

SUPPLEMENTAL BENEFITS
Per hour:
$ 29.00

OVERTIME PAY
See (B, E, E2, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (22) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wages per hour:

Hour terms at the following percentage of Journeyman's wage:

0 to 1500	to 3000	to 4000
70%	80%	90%

Supplemental benefits per hour:

$ 29.00

3-210b

Laborer - Heavy&Highway — 05/01/2026

JOB DESCRIPTION Laborer - Heavy&Highway **DISTRICT** 3

ENTIRE COUNTIES
Erie

WAGES
Heavy/Highway Laborer:
GROUP A: Basic, Drill Helper, Flagman, Outboard and Hand Boats, Demolition Worker, Nurseryman, IBC Barriers (except on structures), Guard Rails, Road Markers.

GROUP B: Grade Checker, Chain Saw, Concrete Aggregate Bin, Concrete Bootmen, Gin Buggy, Hand or Machine Vibrator, Jack Hammer, Mason Tender, Mortar Mixer, Pavement Breaker, Handlers of Steel Mesh, Small Generators for Laborers' Tools, Pipe Layers, Vibrator Type Rollers, Tamper, Drill Doctor, Tail or Screw Operator on Asphalt Paver, Water Pump Operators (2" and Single Diaphragm), Nozzle (Asphalt, Gunite, Seeding, and Sand Blasting), Laborers on Chain Link Fence Erection, Rock Splitter and Power Unit, Pusher Type Concrete Saw and all other Gas, Electric, Oil and Air Tool Operators, Wrecking Laborer and Laser Man.

GROUP C: All Rock or Drilling Machine Operators (Except Quarry Master and Similar Type), Acetylene Torch Operators, Asphalt Raker, Powderman and Welder.

GROUP D: Blasters, Curb and Flatwork Formsetter not on structures, Stone or Granite Curb Setters and Stone Cutter.

Per hour:	07/01/2025	07/01/2026
Heavy/Highway Laborer:		Additional
GROUP A	$ 37.66	$2.25
GROUP B	37.86	$2.25
GROUP C	38.06	$2.25
GROUP D	38.26	$2.25

For all Deleader & Asbestos work add $1.50 to Group A rate.
For all Hazardous waste work add $2.00 to Group A rate.
For wearing of replaceable cartridge respirator in excess of 2 hours per day - add $1.00 to Group A rate.

Sewer/Water Laborer:
GROUP A: Basic, Flagman, Top man, Wreckers.

GROUP B: Foundation, Plaster tender, Scaffold bootman, Pneumatic, gas, electric, tool operator, jackhammer, chipping guns.

GROUP C: Mortar Mixer, over 8 ft. in depth.

GROUP D: Pavement formsetter, Steelburner, Caisson, Wagon Drill Oper., PipeLayer, Swing Scaffold.

GROUP E: Utility pave driver, Laser operator.

GROUP F: Blaster.

Per hour:	07/01/2025
Sewer/Water Laborer:	
GROUP A	$ 37.66
GROUP B	37.76
GROUP C	37.81
GROUP D	37.91
GROUP E	38.26
GROUP F	38.66

For all Deleader & Asbestos work add $1.50 to Group A rate.
For all Hazardous waste work add $2.00 to Group A rate.

SHIFT WORK
An additional $4.00 per hour is required when an irregular work shift starting any time from 3:30PM to 1:00AM is mandated either in the job specification or by the contracting agency.

SUPPLEMENTAL BENEFITS
Per hour:
$ 30.40

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 6) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wages per hour:

Hour terms at the following percentage of Journeyman's wage:

0 to 1500	to 3000	to 4000
70%	80%	90%

Supplemental benefits per hour:

$ 30.40

3-210h

Laborer - Tunnel **05/01/2026**

JOB DESCRIPTION Laborer - Tunnel **DISTRICT** 3

ENTIRE COUNTIES
Erie

WAGES
CLASS A: Mole Nipper, Powder Handler, Changehouse Attendant and Top Laborer.

CLASS B: Air Spade, Jackhammer, Pavement Breaker.

CLASS C: Top Bell.

CLASS D: Bottom Bell, Side or Roofbelt Driller, Maintenance men, Burners, Block Layers, Rodmen, Caulkers, Miners helper, Trackmen, Nippers, Derailmen, Electrical Cablemen, Hosemen, Groutmen, Gravelmen, Form Workers, Movers and Shaftmen, Conveyor men.

CLASS E: Powder Monkey.

CLASS F: Blasters, Ironmen and Cement Worker, Miner, Welder, Heading Driller.

CLASS G: Steel Erectors, Piledriver, Rigger.

Per hour:	07/01/2025
Tunnel Laborer:	
CLASS A	$ 39.16
CLASS B	39.31
CLASS C	39.41
CLASS D	39.91
CLASS E	40.01
CLASS F	40.41
CLASS G	40.66

For all Deleader & Asbestos work add $1.50 to Class A rate.
For all Hazardous waste add $2.00 to Class A rate.
For wearing of replaceable cartridge respirator in excess of 2 hours per day - add $1.00 to Group A rate.

SHIFT WORK
An additional $4.00 per hour is required when a single irregular work shift starting any time from 3:30PM to 1:00AM is mandated either in the job specification or by the contracting agency.

SUPPLEMENTAL BENEFITS
Per hour:

$ 30.40

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE

HOLIDAY

Paid:	See (5, 6) on HOLIDAY PAGE
Overtime:	See (5, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wages per hour:

Hour terms at the following percentage of Journeyman's wage:

0 to 1500	to 3000	to 4000
70%	80%	90%

Supplemental benefits per hour:

$ 30.40

3-210t

Lineman Electrician **05/01/2026**

JOB DESCRIPTION Lineman Electrician **DISTRICT** 6

ENTIRE COUNTIES

Albany, Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Dutchess, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Orange, Orleans, Oswego, Otsego, Putnam, Rensselaer, Rockland, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Wyoming, Yates

WAGES

A Lineman/Technician shall perform all overhead aerial work. A Lineman/Technician on the ground will install all electrical panels, connect all grounds, install and connect all electrical conductors, assembly of all electrical materials, conduit, pipe, or raceway; placing of fish wire; pulling of cables, wires or fiber optic cable through such raceways; splicing of conductors; dismantling of such structures, lines or equipment.

Crane Operators: Operation of any type of crane on line projects.
Crawler Backhoe: Operation of tracked excavator/crawler backhoe with 1/2 yard bucket or larger on line projects.
Digging Machine Operator: All other digging equipment and augering on line projects.

A Groundman/Truck Driver shall: Build and set concrete forms, handle steel mesh, set footer cages, transport concrete in a wheelbarrow, hand or machine concrete vibrator, finish concrete footers, mix mortar, grout pole bases, cover and maintain footers while curing in cold weather, operate jack hammer, operate hand pavement breaker, tamper, concrete and other motorized saws, as a drill helper, operate and maintain generators, water pumps, chainsaws, sand blasting, operate mulching and seeding machine, air tools, electric tools, gas tools, load and unload materials, hand shovel and/or broom, prepare and pour mastic and other fillers, assist digger operator/equipment operator in ground excavation and restoration, landscape work and painting. Only when assisting a lineman technician, a groundman/truck driver may assist in installing conduit, pipe, cables and equipment.

NOTE: Includes Teledata Work within ten (10) feet of High Voltage Transmission Lines. Also includes digging of holes for poles, anchors, footer, and foundations for electrical equipment.

-----Below rates applicable on all overhead and underground distribution and maintenance work, and all overhead and underground transmission line work and the installation of fiber optic cable where no other construction trades are or have been involved. Includes access matting for line work.

Per hour:	07/01/2025	05/04/2026	05/03/2027	05/01/2028
Group A:				
Lineman, Technician	$ 61.56	$ 64.37	$ 66.84	$ 69.47
Crane, Crawler Backhoe	61.56	64.37	66.84	69.47
Welder, Cable Splicer	61.56	64.37	66.84	69.47
Group B:				
Digging Mach. Operator	$ 55.40	$ 57.93	$ 60.16	$ 62.52
Group C:				
Tractor Trailer Driver	$ 52.33	$ 54.71	$ 56.81	$ 59.05
Groundman, Truck Driver	49.25	51.50	53.47	55.58
Equipment Mechanic	49.25	51.50	53.47	55.58
Group D:				
Flagger	$ 33.86	$ 35.40	$ 36.76	$ 38.21

Additional 3% per hour above regular rate for entire crew when a helicopter is used. This will increase to 5% on May 03, 2027.

-----Below rates applicable on all electrical sub-stations, switching structures, fiber optic cable and all other work not defined as "Utility outside electrical work." Includes access matting for line work.

Group A:				
Lineman, Technician	$ 61.56	$ 64.37	$ 66.84	$ 69.47
Crane, Crawler Backhoe	61.56	64.37	66.84	69.47
Cable Splicer	67.72	70.81	73.52	76.42
Certified Welder, Pipe Type Cable	$ 64.64	$ 67.59	$ 70.18	$ 72.94
Group B:				
Digging Mach. Operator	$ 55.40	$ 57.93	$ 60.16	$ 62.52
Group C:				
Tractor Trailer Driver	$ 52.33	$ 54.71	$ 56.81	$ 59.05
Groundman, Truck Driver	49.25	51.50	53.47	55.58
Equipment Mechanic	49.25	51.50	53.47	55.58
Group D:				
Flagger	$ 33.86	$ 35.40	$ 36.76	$ 38.12

Additional 3% per hour above regular rate for entire crew when a helicopter is used. This will increase to 5% on May 03, 2027.

-----Below rates applicable on all railroad catenary installation and maintenance, third rail installation, bonding of rails and pipe type cable and installation of fiber optic cable. Includes access matting for line work.

Group A:				
Lineman, Tech, Welder	$ 62.94	$ 65.81	$ 68.34	$ 71.03
Crane, Crawler Backhoe	62.94	65.81	68.34	71.03
Cable Splicer	69.23	72.39	75.17	78.13
Certified Welder, Pipe Type Cable	66.09	69.10	71.76	74.58
Group B:				
Digging Mach. Operator	$ 56.65	$ 59.23	$ 61.51	$ 63.93
Group C:				
Tractor Trailer Driver	$ 53.50	$ 55.94	$ 58.09	$ 60.38
Groundman, Truck Driver	50.35	52.65	54.67	56.82
Equipment Mechanic	50.35	52.65	54.67	56.82
Group D:				
Flagger	$ 34.62	$ 36.20	$ 37.59	$ 39.07

Additional 3% per hour above regular rate for entire crew when a helicopter is used. This will increase to 5% on May 03, 2027.

-----Below rates applicable on all overhead and underground transmission line work & fiber optic cable where other construction trades are or have been involved. This applies to transmission line work only, not other construction. Includes access matting for line work.

Group A:				
Lineman, Tech, Welder	$ 64.18	$ 67.10	$ 69.68	$ 72.43
Crane, Crawler Backhoe	64.18	67.10	69.68	72.43
Group B:				
Digging Mach. Operator	$ 57.76	$ 60.39	$ 62.71	$ 65.19
Group C:				
Tractor Trailer Driver	$ 54.55	$ 57.04	$ 59.23	$ 61.57
Groundman, Truck Driver	51.34	53.68	55.74	57.94
Equipment Mechanic	51.34	53.68	55.74	57.94
Group D:				
Flagger	$ 35.30	$ 36.91	$ 38.32	$ 39.84

Additional 3% per hour above regular rate for entire crew when a helicopter is used. This will increase to 5% on May 03, 2027.

SHIFT WORK

THE FOLLOWING RATES WILL APPLY ON ALL CONTRACTING AGENCY MANDATED MULTIPLE SHIFTS OF AT LEAST FIVE (5) DAYS DURATION WORKED BETWEEN THE HOURS LISTED BELOW:

1ST SHIFT	8:00 AM to 4:30 PM REGULAR RATE
2ND SHIFT	4:30 PM to 1:00 AM REGULAR RATE PLUS 17.3 %
3RD SHIFT	12:30 AM to 9:00 AM REGULAR RATE PLUS 31.4 %

SUPPLEMENTAL BENEFITS

Per hour:

	07/01/2025	05/04/2026	05/03/2027	05/01/2028
Group A	$ 31.90*	$ 32.90*	$ 34.40*	$ 35.90*
Group B	$ 27.90*	$ 28.90*	$ 30.40*	$ 31.90*
Group C	$ 27.70*	$ 28.50*	$ 29.70*	$ 30.90*
Group D	$ 27.65*	$ 28.40*	$ 29.53*	$ 30.66*

*Plus 7 % of the hourly wage paid. The 7% is based on straight time or premium time.

OVERTIME PAY

See (B, E, Q, X) on OVERTIME PAGE. NOTE: Double time for all emergency work designated by the Dept. of Jurisdiction.
WAGE CAP - Double the straight time hourly base wage shall be the maximum hourly wage compensation for any hour worked. Contractor is still responsible to pay the hourly benefit amount for each hour worked.

HOLIDAY
Paid See (5, 6, 8, 15, 25) on HOLIDAY PAGE
Overtime See (5, 6, 8, 15, 25) on HOLIDAY PAGE
NOTE: All paid holidays falling on Saturday shall be observed on the preceding Friday. All paid holidays falling on Sunday shall be observed on the following Monday. Supplements for holidays paid at straight time.

REGISTERED APPRENTICES
WAGES per hour: 1000 hour terms at the following percentage of the applicable Journeyworker's Lineman wage.

1st	2nd	3rd	4th	5th	6th	7th
60%	65%	70%	75%	80%	85%	90%

SUPPLEMENTAL BENEFITS per hour:

	07/01/2025	05/04/2026	05/03/2027	05/01/2028
All terms:	$ 27.65*	$ 28.40*	$ 29.53*	$ 30.66*

*Plus 7% of the hourly wage paid. The 7% is based on straight time or premium time.

6-1249a

Lineman Electrician - Teledata — 05/01/2026

JOB DESCRIPTION Lineman Electrician - Teledata **DISTRICT** 6

ENTIRE COUNTIES
Albany, Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Dutchess, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Orange, Orleans, Oswego, Otsego, Putnam, Rensselaer, Rockland, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Westchester, Wyoming, Yates

WAGES
NOTE: Applies to all public work and covered private projects, including those receiving ConnectAll funding subject to LL 224-E,solicited prior to July 1, 2025. For all projects, excluding dial-up internet access service, solicited on or after July 1, 2025, please see BROADBAND

Per hour:	07/01/2025
Cable Splicer	$ 40.81
Installer, Repairman	$ 38.73
Teledata Lineman	$ 38.73
Tech., Equip. Operator	$ 38.73
Groundman/Flagger	$ 20.53

For outside work, stopping at first point of attachment (demarcation).

NOTE: EXCLUDES Teledata work within ten (10) feet of High Voltage (600 volts and over) transmission lines. For this work, please see LINEMAN.

SHIFT WORK
THE FOLLOWING RATES APPLY WHEN THE CONTRACTING AGENCY MANDATES MULTIPLE SHIFTS OF AT LEAST FIVE (5) DAYS DURATION ARE WORKED. WHEN TWO (2) OR THREE (3) SHIFTS ARE WORKED THE FOLLOWING RATES APPLY:

1ST SHIFT	REGULAR RATE
2ND SHIFT	REGULAR RATE PLUS 10%
3RD SHIFT	REGULAR RATE PLUS 15%

SUPPLEMENTAL BENEFITS
Per hour:

Journeyworker	$ 5.77 *plus 3% of the hour wage paid

*The 3% is based on the hourly wage paid, straight time rate or premium rate.

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE
WAGE CAP - Double the straight time hourly base wage shall be the maximum hourly wage compensation for any hour worked. Contractor is still responsible to pay the hourly benefit amount for each hour worked.

HOLIDAY

Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 16) on HOLIDAY PAGE

6-1249LT - Teledata

Lineman Electrician - Traffic Signal, Lighting — 05/01/2026

JOB DESCRIPTION Lineman Electrician - Traffic Signal, Lighting **DISTRICT** 6

ENTIRE COUNTIES

Albany, Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Cortland, Delaware, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Orleans, Oswego, Otsego, Rensselaer, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Sullivan, Tioga, Tompkins, Warren, Washington, Wayne, Wyoming, Yates

WAGES

Lineman/Technician shall perform all overhead aerial work. A Lineman/Technician on the ground will install all electrical panels, connect all grounds, install and connect all electrical conductors which includes, but is not limited to road loop wires; conduit and plastic or other type pipes that carry conductors, flex cables and connectors, and to oversee the encasement or burial of such conduits or pipes.

Crane Operators: Operation of any type of crane on Traffic Signal/Lighting projects.
Crawler Backhoe: Operation of tracked excavator/crawler backhoe with 1/2 yard bucket or larger on Traffic Signal/Lighting projects.
Digging Machine Operator: All other digging equipment and augering on Traffic Signal/Lighting projects.

A Groundman/Truck Driver shall: Build and set concrete forms, handle steel mesh, set footer cages, transport concrete in a wheelbarrow, hand or machine concrete vibrator, finish concrete footers, mix mortar, grout pole bases, cover and maintain footers while curing in cold weather, operate jack hammer, operate hand pavement breaker, tamper, concrete and other motorized saws, as a drill helper, operate and maintain generators, water pumps, chainsaws, sand blasting, operate mulching and seeding machine, air tools, electric tools, gas tools, load and unload materials, hand shovel and/or broom, prepare and pour mastic and other fillers, assist digger operator/equipment operator in ground excavation and restoration, landscape work and painting. Only when assisting a lineman technician, a groundman/truck driver may assist in installing conduit, pipe, cables and equipment.

A flagger's duties shall consist of traffic control only.

Per hour:	07/01/2025	05/04/2026	05/03/2027	05/01/2028
Group A:				
Lineman, Technician	$ 52.86	$ 55.31	$ 57.40	$ 59.64
Crane, Crawler Backhoe	52.86	55.31	57.40	59.64
Certified Welder	55.50	58.08	60.27	62.62
Group B:				
Digging Machine	$ 47.57	$ 49.78	$ 51.66	$ 53.68
Group C:				
Tractor Trailer Driver	$ 44.93	$ 47.01	$ 48.79	$ 50.69
Groundman, Truck Driver	42.29	44.25	45.92	47.71
Equipment Mechanic	42.29	44.25	45.92	47.71
Group D:				
Flagger	$ 31.72	$ 33.19	$ 34.44	$ 35.78

Above rates are applicable for installation, testing, operation, maintenance and repair on all Traffic Control (Signal) and Illumination (Lighting) projects, Traffic Monitoring Systems, and Road Weather Information Systems. Includes digging of holes for poles, anchors, footer foundations for electrical equipment; assembly of all electrical materials or raceway; placing of fish wire; pulling of cables, wires or fiber optic cable through such raceways; splicing of conductors; dismantling of such structures, lines or equipment.

SHIFT WORK

THE FOLLOWING RATES WILL APPLY ON ALL CONTRACTING AGENCY MANDATED MULTIPLE SHIFTS OF AT LEAST FIVE (5) DAYS DURATION WORKED BETWEEN THE HOURS LISTED BELOW:

1ST SHIFT	8:00 AM TO 4:30 PM	REGULAR RATE
2ND SHIFT	4:30 PM TO 1:00 AM	REGULAR RATE PLUS 17.3%
3RD SHIFT	12:30 AM TO 9:00 AM	REGULAR RATE PLUS 31.4%

SUPPLEMENTAL BENEFITS

Per hour worked:

	07/01/2025	05/04/2026	05/03/2027	05/01/2028
Group A	$ 31.90*	$ 32.90*	$ 34.40*	$ 35.90*
Group B	$ 27.90*	$ 28.90*	$ 30.40*	$ 31.90*

Group C	$ 27.70*	$ 28.50*	$ 29.70*	$ 30.90*
Group D	$ 27.65*	$ 28.40*	$ 29.53*	$ 30.66*

* Plus 7% of the hourly wage paid. The 7% is based on straight time or premium time.

OVERTIME PAY
See (B, E, Q, X) on OVERTIME PAGE. NOTE: Double time for all emergency work designated by the Dept. of Jurisdiction.
WAGE CAP - Double the straight time hourly base wage shall be the maximum hourly wage compensation for any hour worked. Contractor is still responsible to pay the hourly benefit amount for each hour worked.

HOLIDAY
Paid: See (5, 6, 8, 15, 25) on HOLIDAY PAGE
Overtime: See (5, 6, 8, 15, 25) on HOLIDAY PAGE
NOTE: All paid holidays falling on Saturday shall be observed on the preceding Friday. All paid holidays falling on Sunday shall be observed on the following Monday. Supplements for holidays paid at straight time.

REGISTERED APPRENTICES
WAGES per hour: 1000 hour terms at the following percentage of the applicable Journeyworker's Lineman wage.

1st	2nd	3rd	4th	5th	6th	7th
60%	65%	70%	75%	80%	85%	90%

SUPPLEMENTAL BENEFITS per hour:

	07/01/2025	05/04/2026	05/03/2027	05/01/2028
All terms:	$ 27.65*	$ 28.40*	$ 29.53*	$ 30.66*

* Plus 7% of the hourly wage paid. The 7% is based on straight time or premium time.

6-1249a-LT

Lineman Electrician - Tree Trimmer — 05/01/2026

JOB DESCRIPTION Lineman Electrician - Tree Trimmer **DISTRICT** 6

ENTIRE COUNTIES
Albany, Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Dutchess, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Orange, Orleans, Oswego, Otsego, Putnam, Rensselaer, Rockland, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Wyoming, Yates

WAGES
Applies to line clearance, tree work and right-of-way preparation on all new or existing energized overhead or underground electrical, telephone and CATV lines. This also includes stump removal near underground energized electrical lines including telephone and CATV lines.

Per hour:	07/01/2025	01/01/2026	01/04/2026	01/03/2027
Tree Trimmer	$ 33.18	$ 33.18	$ 34.67	$ 36.23
Equipment Operator	29.35	29.35	30.67	32.05
Equipment Mechanic	29.35	29.35	30.67	32.05
Truck Driver	23.85	23.85	24.93	26.05
Groundman	19.64	19.64	20.53	21.45
Flagger	15.50	16.00	16.20	16.93

SUPPLEMENTAL BENEFITS
Per hour:

Journeyworker	$ 10.98*	$ 10.98*	$ 11.23*	$ 11.48*

* Plus 4.5% of the hourly wage paid. The 4.5% is based on straight time rate or premium rate.

OVERTIME PAY
See (B, E, Q, X) on OVERTIME PAGE
WAGE CAP - Double the straight time hourly base wage shall be the maximum hourly wage compensation for any hour worked. Contractor is still responsible to pay the hourly benefit amount for each hour worked.

HOLIDAY
Paid: See (5, 6, 8, 15, 16, 25) on HOLIDAY PAGE
Overtime: See (5, 6, 8, 15, 16, 25) on HOLIDAY PAGE
NOTE: All paid holidays falling on a Saturday shall be observed on the preceding Friday. All paid holidays falling on a Sunday shall be observed on the following Monday.

6-1249TT

Mason - Building **05/01/2026**

JOB DESCRIPTION Mason - Building **DISTRICT** 3

ENTIRE COUNTIES
Erie, Niagara

PARTIAL COUNTIES
Cattaraugus: Only the Township of Perrysburg and the Village of Gowanda.

WAGES

Per hour:	07/01/2025
Plasterer	$ 33.05

Additional $3.00/hr for work on swing stage over 20 feet.

SUPPLEMENTAL BENEFITS
Per hour:
$ 25.09

OVERTIME PAY
Exterior work only See (B, E, E2, Q) on OVERTIME PAGE.
All other work See (B, E, Q) on OVERTIME PAGE.

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wages per hour:

Hour terms at the following dollar amounts:

	07/01/2025
0-2000	$ 20.00
2000-4000	$ 22.00
4000-6000	$ 24.00
6000-8000	$ 26.00

Supplemental benefits per hour:

Hour terms at the following dollar amounts:

0-2000	$ 3.00
2000-4000	$ 4.00
4000-8000	$ 5.00

3-9-Pltr

Mason - Building **05/01/2026**

JOB DESCRIPTION Mason - Building **DISTRICT** 5

ENTIRE COUNTIES
Erie, Niagara

PARTIAL COUNTIES
Cattaraugus: Only the Township of Perrysburg and the Village of Gowanda.

WAGES

Per Hour:	07/01/2025
Building:	
Bricklayer	$ 39.44
Stone Mason	39.44
Tuck Pointer	39.44

SUPPLEMENTAL BENEFITS
Per hour:

Journeyman	$ 33.64

OVERTIME PAY
See (B,E,E2*,Q) on OVERTIME PAGE
*Note - Or other conditions beyond the employer's control such as fire or natural disaster.

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wages per hour:

1250 hour terms at the following wage:

1st	2nd	3rd	4th
$ 29.97	$ 30.89	$ 33.21	$ 36.38

Supplemental benefits per hour:

1st	2nd	3rd	4th
$ 13.78	$ 20.19	$ 25.20	$ 29.37

5-3B-Z3

Mason - Building / Heavy&Highway — 05/01/2026

JOB DESCRIPTION Mason - Building / Heavy&Highway **DISTRICT** 3

ENTIRE COUNTIES
Erie

PARTIAL COUNTIES
Cattaraugus: Only the Township of Perrysburg and the Village of Gowanda.

WAGES
Per hour: 07/01/2025

Cement Mason $ 33.65

Additional $0.25 per hr for Swing scaffold or exterior scaffold 42' or higher.
Additional $1.00 per hr when required to wear respirator.

SUPPLEMENTAL BENEFITS
Per hour:
$ 33.22

OVERTIME PAY
See (B, E, Q, V) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wages per hour:

750 hour terms at the following dollar amounts:

1st	2nd	3rd	4th	5th	6th
$ 20.19	$ 21.87	$ 23.56	$ 25.24	$ 26.92	$ 28.60

Supplemental benefits per hour:

1st	2nd	3rd	4th	5th	6th
$ 8.86	$ 11.86	$ 11.80	$ 15.05	$ 17.20	$ 20.54

3-111Erie

Mason - Heavy&Highway — 05/01/2026

JOB DESCRIPTION Mason - Heavy&Highway **DISTRICT** 5

ENTIRE COUNTIES
Allegany, Broome, Chautauqua, Chemung, Chenango, Cortland, Delaware, Genesee, Livingston, Monroe, Ontario, Orleans, Otsego, Schuyler, Seneca, Steuben, Tioga, Tompkins, Wayne, Wyoming, Yates

PARTIAL COUNTIES
Cattaraugus: Enitre county except in the Township of Perrysburg and the Village of Gowanda only the Bricklayer classification applies.
Erie: Only the Bricklayer classification applies.
Niagara: Only the Bricklayer classification applies.

WAGES
Per hour: 07/01/2025

Heavy & Highway:
Cement Mason $ 38.63
Bricklayer 38.63

SUPPLEMENTAL BENEFITS
Per hour:

Journeyman $ 26.28

OVERTIME PAY
See (B, E, E2, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wages per hour:

1500 hour terms at the following percentage of Journeyman's wage:

1st	2nd	3rd	4th
50%	60%	70%	80%

Supplemental benefits per hour:

1st term $ 15.40
2nd term $ 24.62
3rd term $ 25.04
4th term $ 25.45

5-3h

Mason - Tile Finisher — 05/01/2026

JOB DESCRIPTION Mason - Tile Finisher **DISTRICT** 5

ENTIRE COUNTIES
Erie, Niagara, Orleans

PARTIAL COUNTIES
Cattaraugus: Only the Township of Perrysburg and the Village of Gowanda.

WAGES
Per hour: 07/01/2025

Building:
Marble, Slate, Terrazzo and Tile Finisher $ 35.71

SUPPLEMENTAL BENEFITS
Per hour: $ 19.47

OVERTIME PAY
See (B,E,E2*,Q) on OVERTIME PAGE
*Note - Or other conditions beyond the employer's control such as fire or natural disaster.

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wages per hour:

1200 hours 1st and 2nd term and 1300 hours 3rd term at the following wage:

1st	2nd	3rd
$ 22.57	$ 25.74	$ 29.22

Supplemental benefits per hour:

1st	2nd	3rd
$ 10.44	$ 12.81	$ 14.87

5-3TF - Z3

Mason - Tile Setter — 05/01/2026

JOB DESCRIPTION Mason - Tile Setter **DISTRICT** 5

ENTIRE COUNTIES
Erie, Niagara, Orleans

PARTIAL COUNTIES
Cattaraugus: Only in the Township of Perrysburg and the Village of Gowanda.

WAGES

Per hour:	07/01/2025
Building:	
Marble, Slate, Terrazzo and Tile Setter	$ 38.85

SUPPLEMENTAL BENEFITS
Per hour: $ 33.73

OVERTIME PAY
See (B,E,E2*,Q) on OVERTIME PAGE
*Note - Or other conditions beyond the employer's control such as fire or natural disaster.

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wages per hour:

1250 hour terms at the following wage:

1st	2nd	3rd	4th
$ 29.48	$ 30.30	$ 32.32	$ 36.14

Supplemental benefits per hour:

1st	2nd	3rd	4th
$ 13.97	$ 20.43	$ 25.69	$ 29.16

5-3TS - Z3

Millwright — 05/01/2026

JOB DESCRIPTION Millwright **DISTRICT** 6

ENTIRE COUNTIES
Albany, Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Orleans, Oswego, Otsego, Rensselaer, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Wyoming, Yates

WAGES
THE FOLLOWING RATE APPLIES TO ANY GAS/STEAM TURBINE AND OR RELATED COMPONENT WORK, INCLUDING NEW INSTALLATIONS OR MAINTENANCE AND ANY/ALL WORK PERFORMED WITHIN THE PROPERTY LIMITS OF A NUCLEAR FACILITY.

Per hour:	07/01/2025
Millwright - Power Generation	$ 47.00

NOTE: ADDITIONAL PREMIUMS PAID FOR THE FOLLOWING WORK LISTED BELOW (amount subject to any overtime premiums):
- Certified Welders shall receive an additional $1.75 per hour provided they are directed to perform Certified Welding.
- If a work site has been declared a hazardous site by the Owner and the use of protective gear (including, as a minimum, air purifying canister-type chemical respirators) is required, then that employee shall receive an additional $1.50 per hour.
- An employee performing the work of a machinist shall receive an additional $2.00 per hour. For the purposes of this premium to apply, a "machinist" is a person who uses a lathe, Bridgeport, milling machine or similar type of tool to make or modify parts.
- When performing work underground at 500 feet and below, the employee shall receive an additional $1.00 per hour.

SUPPLEMENTAL BENEFITS
Per hour paid:

Journeyworker	$ 28.45*

*NOTE: Subject to OT premium

OVERTIME PAY
See (B, E, E2, Q, V) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE
NOTE: Any holiday that falls on Sunday shall be observed the following Monday. Any holiday that falls on Saturday shall be observed the preceding Friday.

REGISTERED APPRENTICES
WAGES per hour: One year terms at the following percentage of Journeyworker's wage:

Appr. 1st year	65%*
Appr. 2nd year	75%*
Appr. 3rd year	80%*
Appr. 4th year	90%*

*NOTE: Additional premium for the following work listed below:

Certified Welder	$ 1.75
Hazardous Waste Work	1.50
Machinist	2.00
Underground (500' and below)	1.00

SUPPLEMENTAL BENEFITS per hour:

Appr. 1st year	$ 11.95
Appr. 2nd year	23.50
Appr. 3rd year	25.15
Appr. 4th year	26.80

6-1163Power

Millwright — 05/01/2026

JOB DESCRIPTION Millwright **DISTRICT** 12

ENTIRE COUNTIES
Erie, Genesee, Niagara

WAGES
Per hour: 07/01/2025

Building	$ 42.23
Heavy & Highway*	$ 45.73

NOTE ADDITIONAL PREMIUMS PAID FOR THE FOLLOWING WORK LISTED BELOW (amount subject to any overtime premiums):

-*H/H work performed on hazardous waste sites where employees are required to wear protective gear shall receive an additional $2.00 per hour.
- If a building work site has been declared a hazardous site and the use of protective gear (including, at a minimum, air purifying canister-type chemical respirators) are required, then that employee shall receive a $1.50 premium per hour.
- Certified Welders shall receive $1.75 per hour in addition to the current Millwright's rate provided he/she is directed to perform certified welding.
- An employee performing work on site as a machinist shall receive $2.00 per hour in addition to the current Building & Heavy Millwright's rate. For the purposes of this premium to apply, a "machinist" is a person who uses a lathe, Bridgeport, milling machine or similar type of tool to make or modify parts.
- When performing work underground at 500 feet and below, the employee shall receive an additional $1.00 per hour.

SUPPLEMENTAL BENEFITS
Per hour Paid:

All Classifications	$ 32.29

OVERTIME PAY
See (B, E, E2, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wages per hour:

1300 hour terms at the following percentage of Journeyman's wage:

1st	2nd	3rd	4th
65%	75%	80%	90%

Supplemental Benefits per hour worked:

1st	2nd	3rd	4th
$11.95	$26.19	$28.22	$30.26

12-1163-Gen/Nia/Orl/Wyo

Operating Engineer — 05/01/2026

JOB DESCRIPTION Operating Engineer **DISTRICT** 12

ENTIRE COUNTIES
Cattaraugus, Chautauqua, Erie, Niagara, Orleans, Wyoming

PARTIAL COUNTIES
Genesee: The portion of the county that lies west of a line down the center of Route 98 excluding that area that lies within the City of Batavia.

WAGES

	7/01/2025
Per Hour:	
Concrete Pump	$47.38
ADDITIONAL:	
Pumps from	
46-65 meters	$4.25/HR
Hazardous Work Site	$2.50/HR

SUPPLEMENTAL BENEFITS

Per Hour:	$33.10
At Time and a Half	$37.55
At Double Time	$42.30

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE

12-17Pump

Operating Engineer - Building — 05/01/2026

JOB DESCRIPTION Operating Engineer - Building **DISTRICT** 12

ENTIRE COUNTIES
Cattaraugus, Chautauqua, Erie, Niagara, Orleans, Wyoming

PARTIAL COUNTIES
Genesee: Only that portion of the county that lies west of a line down the center of Route 98 excluding that area that lies within the City of Batavia.

WAGES

CLASS A: Air Hoist, All Boom Type Equipment, All Pans and Carry-Alls, Archer Hoist, Asphalt Curb and Gutter Machines, Asphalt Roller, Asphalt Spreader or Paver, Automatic Fine Grade Machine (CMI or similar, first and second operator), Backhoe and Pullhoe, Backhoe and Pullhoe (tractor mounted, rubber tired), Back Filling Machine, Belt Placer (CMI or similar type), Bending Machine (Pipe), Bituminous Spreader and Mixer, Blacktop Plants (Automated and Non-automated), Blast or Rotary Drill (Truck or Track Mounted), Blower for Burning Brush, Boiler (when used for power), Boom Truck (excluding pick-up and delivery), Boring Machine, Bulldozer, Cableway, Cage Hoist, Caisson Auger, Central Mix Plant (and all concrete batching plants), Cherry Picker, Concrete Cleaning Decontamination Machine Operator, Concrete Curb and Gutter Machine, Concrete Curing Machine, Concrete Cutters (Vermeer or Similar Type), Concrete Mixer (over 1/2 cu yd.), Concrete Pavement Spreaders and Finishers, Concrete Paver, Conveyor, Core Drill, Crane, Crusher, Decon of Equipment, Derrick, Dragline, Dredge, Drill Rig (Tractor Mounted), Dual Drum Paver, Electric Pump used in conjunction with Well Point Systems, Elevating Grader (self propelled or towed), Elevator, Excavator (all purpose, hydraulically operated), Farm Tractor with Accessories, Fine Grade Machine, Forklift, Front End Loader, Generator (10 outlets or more), Gradall, Grader, Grout or Gunite Machine, Head Tower, Heavy Equipment Robotics Operator/Mechanic, Helicopter (when used for hoisting), Hoist (one drum), Hoisting Engine, Horizontal Directional Drill Locator, Horizontal Directional Drill Operator, Hydraulic Boom, Hydraulic Hammer (self-propelled), Hydraulic Pipe Jack Machine (or similar type machine), Hydraulic Rock Expander (or similar type machine), Hydraulic System Pumps, Hydro Crane, Hydro Hammer (or similar type), Industrial Tractor, Jersey Spreader, Kolman Plant Loader (and similar type loaders), Laser Screed, Locomotive, Lubrication Truck, Maintenance Engineer, Maintenance, Lubrication Unit or Truck, Mine Hoist, Mixer for Stabilized Base (self-propelled), Monorail, Motorized Hydraulic Pin Puller, Motorized Hydraulic Seeder, Mucking Machine, Mulching Machine, Multiple Drum Hoist (more than one drum in use), Overhead Crane, Peine Crane (or similar type), Pile Driver, Plant Engineer, Pneumatic Mixer, Post Hole Digger and Driver, Power Broom, Pump Crete, Push Button Hoist, Push or Snatch Cat, Quarry Master or equivalent, Road Widener, Rock Bit Sharpener (all types), Roller (all), Rolling Machine (pipe), Rotomill, Scissors Trucks, Lift, or Boom Lift of any type (when used for hoisting), Scoopmobile, Shovel, SideBoom, Skidsteer/Bobcat (Similar Type), Skimmer, Slip Form Paver (CMI or similar type), Snorkel/Vacuum Truck, Strato-Tower, Stump Chipping Machine, Tire Truck and Drivers performing tire repair (exclude outside vendor), Towed Roller, Tractor Drawn Belt-Type Grader/Loader, Tractor Shovel, Tractor with Towed Accessories, Tractor (when using winch power), Tractors, Trencher, Truck Crane, Truck Mechanic and Helper (exclude Teamsters when repairing their own trucks), Tunnel Shovel, Tube Finisher (CMI and similar type), Ultra High Pressure Waterjet Cutting Tool System Operator/Mechanic, Vacuum Blasting Machine Operator/Mechanic, Vibratory Compactor, Vibro Tamp, Well Drilling Machine, Well Point, Winch, Winch Truck with A Frame.

CLASS B: Aggregate Bin, Aggregate Plant, Apprentice Engineer, Apprentice Engineer Driver, Articulated Off Road Material Hauler, Boiler (used in conjunction with production), CMI and similar type Concrete Spreads (Apprentice Engineer), Cement Bin, Chipping Machine and Chip Spreader, Compressors (4 or less), Compressors (any size, but subject to other provisions for Compressors, Dust Collectors, Generators, Mechanical Heaters, Pumps, Welding Machines - four of any type or combination), Concrete Mixer (1/2 cu. yd. and under), Fireman, Form Tamper, Form Trucks (excluding Teamster or delivery), Fuel Truck or Drivers (exclude Teamster or delivery), Heaters, Heating Boiler (used for temporary heat), Helper on Lubrication Unit or Truck, Jeep Trencher, Power Heaterman, Power Plant in excess of 10 K.W., Pumps, Revinius Widener, Steam Boilers (if manning or license by local law is required), Steam Cleaner (when used for cleaning equipment on the job site), Welding Machine (1 machine over 300 amps or 2 or 3 machines regardless of amps).

Operating Engineer- Building:

Per hour:	07/01/2025
Class A	$ 44.23
Class B	39.14
Crane(Up to 60 Tons)	47.48
" (61 to 199 Tons)	48.48
" (200 to 399 Tons)	48.98
" (400 Tons or more)	49.48

Additional $5.75/hr. for Any Tower Crane
Additional $2.50/hr. for Hazardous Work Site
Additional $1.00/hr. for Tunnel Work
Additional $2.25/hr. for Agency Mandated Shift Work

SUPPLEMENTAL BENEFITS
Per Hour:

Journeyman	$ 35.45**

**Note: For Overtime Hours $26.25 of this amount is paid a straight time, the remaining balance of $9.20 is paid at the same premium as the wage.

OVERTIME PAY
See (B, E, *E2, P, V) on OVERTIME PAGE
* Only Saturdays between October 15th and April 15th.

HOLIDAY
Paid: See (5, 6) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wages per hour:
1 year Terms

1st	2nd	3rd	4th
$ 33.63	$ 34.55	$ 35.47	$ 36.39

Supplemental benefits Per Hour:
All Apprentices $ 34.55**

**Note: For Overtime Hours $26.25 of this amount to be paid a straight time rate remaining balance of $8.30 is paid at same premium as the wage.

12-17b

Operating Engineer - Heavy&Highway **05/01/2026**

JOB DESCRIPTION Operating Engineer - Heavy&Highway **DISTRICT** 12

ENTIRE COUNTIES
Chautauqua, Erie, Niagara, Orleans

WAGES
Marine Construction/Dredging

Class 1: Diver/Wet Tender, Engineer, Engineer(hydraulic dredge), Blaster.

Class 2(A): Crane, Backhoe Operator, Material Handler, ALL Self-propelled Drill Rigs, Mechanic/Welder, Asst. Engineer(hydraulic dredge), Leverman(hydraulic dredge), Diver/Dry Tender.

Class 2(B): Friction, Lattice Boom, or Crane License Certificate, Endorse Tug or Tow Boat Operator.

Class 3: Deck Equipment Operator, (Machineryman), Maintenance of Crane, Tug/Launch Operator, Loader/Dozer on Barge.

Class 4: Deck Equipment Operator and Machinery Man/Fireman on 4 equipment units or more, Off Road Trucks, Deck Hand, Tug Engineer, Crane Maintenance (50 tons and under/ backhoe 115,000lbs or less), Asst. Tug Operator, Blaster Helper.

Per hour:	07/01/2025
Class 1	$ 56.00
Class 2(A)	54.50
Class 2(B)	57.50
Class 3	50.00
Class 4	45.50

Hazardous/Toxic Waste based on EAP Levels
Additional:
Level A - $2.50/Hr.
Level B - 2.00/Hr.
Level C - 1.00/Hr.
Level D - 0.50/Hr.

SUPPLEMENTAL BENEFITS
Per Hour Paid:

ALL CLASSES	$ 36.81

OVERTIME PAY
See (B, E, I, *S, X) on OVERTIME PAGE
* If the Holiday is Worked

HOLIDAY
Paid: See (5, 6, 15, 25) on HOLIDAY PAGE

12-17 Marine

Operating Engineer - Heavy&Highway **05/01/2026**

JOB DESCRIPTION Operating Engineer - Heavy&Highway **DISTRICT** 12

ENTIRE COUNTIES
Cattaraugus, Chautauqua, Erie, Niagara, Orleans, Wyoming

PARTIAL COUNTIES
Genesee: Only that portion of the county that lies west of a line down the center of Route 98 excluding that area that lies within the City of Batavia.

WAGES

CLASS A: Air Hoist, All Boom Type Equipment, All Pans and Carry-All's, Asphalt Curb and Cutter Machines, Asphalt Roller, Asphalt Spreader or Paver, Automatic Fine Grade Machine (CMI or similar, first and second operator), Backhoe and Pullhoe (all), Back Filling Machine, Belt Placer (CMI or similar type), Bending Machine (pipe), Bituminous Spreader and Mixer, Blacktop Plant (all), Blast or Rotary Drill (Truck or Track Mounted), Blower for Burning Brush, Boiler (when used for power), Boom Truck, Boring Machine, Bulldozer, Cableway, Cage Hoist, Caisson Auger, Central Mix Plant (and all Concrete Batching Plants), Cherry Picker, Concrete Cleaning Decontamination Machine, Concrete Curb and Gutter Machine, Concrete Curing Machine, Concrete Mixer (over 1/2 cu. yd.), Concrete Pavement Spreaders and Finishers, Concrete Paver, Concrete Saw (self propelled), Conveyor, Convoying Vehicles Convoying Engineer's Equipment, Core Drill, Crane, Crusher, Decontamination of Equipment, Derrick, Dragline, Dredge, Drill Rig (Tractor Mounted), Dual Drum Paver, Electric Pump used in conjunction with Well Point Systems, Elevating Grader (self propelled or towed), Elevator, Excavator (all purpose, hydraulically operated), Farm Tractor with Accessories, Fine Grade Machine, Forklift, Front End Loader, Gradall, Grader, Grout or Gunite Machine, Head Tower, Heavy Equipment Robotics Operator/Mechanic, Hoist (all types), Hoisting Engine, Horizontal Directional Drill Locator, Horizontal Directional Drill Operator, Hydraulic Boom, Hydraulic Hammer (self propelled), Hydraulic Pipe Jack Machine, (or similar type machine), Hydraulic Rock Expander (or similar type machine), Hydraulic System Pumps, Industrial Tractor, Jersey Spreader, Kolman Plant Loader (and similar type Loaders), Laser Screed, Locomotive, Log Skidder (similar type), Maintenance Engineer, Maintenance, Lubrication Unit or Truck, Mine Hoist, Mixer for Stabilized Base (self propelled), Monorail, Motorized Hydraulic Pin Puller, Motorized Hydraulic Seeder, Mucking Machine, Mulching Machine, Overhead Crane, Parts Chasing, Peine Crane (or similar type), Pile Driver, Plant Engineer, Pneumatic Mixer, Post Hole Digger and Post Driver, Power Broom, Pump Crete, Push Button Hoist, Push or Snatch Cat, Quarry Master (or equivalent), Road Widener, Rock Bit Sharpener (all types), Roller (all), Rolling Machine (Pipe), Rotomill, Scoopmobile, Shovel, Side Boom, Skidsteer/Bobcat (similar type), Skimmer, Slip Form Paver (CMI or similar, first and second operator), Snorkel/Vacuum Truck, Strato-Tower, Tire Truck & Repair, Towed Roller, Tractor Drawn Belt-Type Grader/Loader, Tractor Shovel, Tractor with Towed Accessories, Tractors (when using winch power), Trencher, Truck Crane, Tug Boats, Tunnel Shovel, Tube Finisher (CMI and similar), Vacuum Blasting Machine Operator/Mechanic, Vibratory Compactor, Vibro Tamp, Waterjet Cutting Tool System Operator/Mechanic (Ultra High Pressure), Well Drilling Machine, Well Point, Winch, Winch Truck with A Frame.

CLASS B: Aggregate Bin, Aggregate Plant, Apprentice Engineer, Apprentice Engineer Driver, Articulated Off Road Material Hauler, CMI and similar type Concrete Spreads (Apprentice Engineer), Cement Bin, Chipping Machine and Chip Spreader, Compressors (4 or less), Compressors: any size, but subject to other provisions for Compressors, Dust Collectors, Generators, Mechanical Heaters, Pumps, Welding Machines (four of any type or combination), Concrete Mixer (1/2 cu. yd. and under), Fireman, Form Tamper, Fuel Truck, Heating Boiler (used for temporary heat), Helper on Lubrication Unit or Truck, Jeep Trencher, Power Heaterman, Power Plant in excess of 10 K.W., Pumps (4" or over), Revinius Widener, Steam Cleaner, Stump Chipping Machine, Welding Machine (1 machine over 300 amps or 2 or 3 machines regardless of amps).

Operating Engineer- Heavy & Highway, Sewer (includes cleaning, lining & rehab), Water & Tunnel

Per hour:	07/01/2025	07/01/2026
Class A	$ 47.39	Additional
Class B	42.89	$5.50/Hr.
Crane 5 to 110 tons	52.39	
" 111 to 199 tons	53.39	
" 200 to 599 tons	54.39	
" 600 to 999 tons	56.39	
" 1000 tons and over	57.39	

Cranes in Luffer Configuration additional $5.00/Hr.
Cranes with external ballast(tray or wagon) additional $5.00/Hr.

Additional $2.50/hr. for Hazardous Work Site
Additional $1.00/hr. for Tunnel Work
Additional $8.00/hr. for Mandated Single Irregular Shift Work (Projects Bid After 7/1/2025)

SUPPLEMENTAL BENEFITS
Per hour:

Journeymen	$ 36.86
At Time and a Half	$ 45.32
At Double Time	$ 53.77

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE
Note: Overtime rate is 1.5X the wage plus $9.93/Hr., Overtime rate is 2X the wage plus $19.85/Hr.

HOLIDAY
Paid: See (5, 6) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wages per hour:
Apprentices at 1 year terms

1st	2nd	3rd	4th
$ 39.89	$ 40.89	$ 41.89	$ 42.89

Supplemental Benefits	
All Apprentices	$ 36.46
At Time and a Half	$ 44.72
At Double Time	$ 52.97

12-17 hh/sw/t

Operating Engineer - Survey Crew 05/01/2026

JOB DESCRIPTION Operating Engineer - Survey Crew **DISTRICT** 12

ENTIRE COUNTIES
Cattaraugus, Chautauqua, Erie, Niagara, Orleans, Wyoming

PARTIAL COUNTIES
Genesee: Only that portion of the county that lies west of a line down the center of Route 98 excluding that area that lies within the City of Batavia.

WAGES
These rates apply to Building, Heavy and Highway Construction.

Per hour:
SURVEY CLASSIFICATIONS:

Party Chief - One who directs a survey party.
Instrument Person - One who operates the surveying instruments.
Rod Person - One who holds the rods and assists the Instrument Person.

	07/01/2025
Party Chief	$ 51.19
Instrument Person	48.29
Rod Person	33.74

Additional $3.00 per hr. for work in a Tunnel.
Additional $2.50 per hr. for EPA or DEC certified toxic or hazardous waste work.

SUPPLEMENTAL BENEFITS
Per hour worked:

Journeyman	$ 31.65

OVERTIME PAY
See (B, E, Q, X) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES
WAGES:1000 hour terms based on the Percentage of Rod Person wage:

	07/01/2025
0-1000 Hrs	60%
1001-2000 Hrs	70%
2001-3000 Hrs	80%

SUPPLEMENTAL BENEFITS per hour worked:

0-1000 Hrs	$ 20.07/	PHP	$14.79
1001-2000 Hrs	22.85 /	"	17.01
2001-3000 Hrs	25.62 /	"	19.62

NOTE: PHP is premium hours paid when worked.

12-17D Sur

Operating Engineer - Survey Crew - Consulting Engineer 05/01/2026

JOB DESCRIPTION Operating Engineer - Survey Crew - Consulting Engineer **DISTRICT** 12

ENTIRE COUNTIES
Cattaraugus, Chautauqua, Erie, Niagara, Orleans, Wyoming

PARTIAL COUNTIES

Genesee: Only that portion of the county that lies west of a line down the center of Route 98 excluding that area that lies within the City of Batavia.

WAGES
These rates apply to feasibility and preliminary design surveying, line of grade surveying for inspection or supervision of construction when performed under a Consulting Engineer Agreement.

Per hour:
SURVEY CLASSIFICATIONS:

Party Chief - One who directs a survey party.
Instrument Person - One who operates the surveying instruments.
Rod Person - One who holds the rods and assists the Instrument Person.

	07/01/2025
Party Chief	$ 51.19
Instrument Person	48.29
Rod Person	33.74

SUPPLEMENTAL BENEFITS
Per hour worked:

Journeyman	$ 31.65

OVERTIME PAY
See (B, E, Q, X) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 6) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES
WAGES: 1000 hour terms based on the Percentage of Rod Persons Wage:

	07/01/2025
0-1000	60%
1001-2000	70%
2001-3000	80%

SUPPLEMENTAL BENEFITS per hour worked:

0-1000	$ 20.07 / PHP $14.79
1001-2000	22.85/ " 17.01
2001-3000	25.62 / " 19.62

NOTE: PHP is premium hours paid

12-17D Con Eng

Painter — 05/01/2026

JOB DESCRIPTION Painter **DISTRICT** 3

ENTIRE COUNTIES
Allegany, Erie, Genesee, Niagara, Orleans, Wyoming

PARTIAL COUNTIES
Cattaraugus: Entire County except the Townships of Conewango, Leon, Napoli, New Albion, Randolph and South Valley.
Chautauqua: Only the Townships of Awkright, Dunkirk, Hanover, Pomfret, Portland, Sheridan and Villenova.
Livingston: Only the Townships of North Dansville, Nunda, Ossian,Portage, Sparta, Spring Water and West Sparta.
Steuben: Only the Townships of Avoca, Canisteo, Cohocton, Dansville,Fremont, Greenwood, Hartsville, Hornellsville, Howard, Jasper, Prattsburg, Pulteney, Troupsburg, Tuscarora, Urbana, Wayland, Wayne, Woodhull, West Union, Wheeler, and the City of Hornell.

WAGES

Per hour:	07/01/2025	05/01/2026 Additional
Basic Rate (Brush & Roll)	$ 33.00	$ 1.93
Spray painting, wallcovering	33.00	1.93
Abrasive and hydroblasting	33.00	1.93
Taping/DryWall Finisher	34.00	2.13
Skeleton Steel*	33.75	1.93

* Skeleton Steel: No floors, walls or ceiling are constructed, including radio and television towers, flagpoles, smokestacks and cranes.

SUPPLEMENTAL BENEFITS

Per hour:

Basic Rate (Brush & Roll) Spray painting, wallcovering Abrasive and hydroblasting and Skeleton Steel	$ 28.51
Taping/Drywall Finisher	$ 28.81

OVERTIME PAY
Exterior work only See (B, E2, E4, F, R) on OVERTIME PAGE.
All other work See (B, F, R) on OVERTIME PAGE.

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wages per hour:

Painter/Decorator: 750 hour terms at the following wage:

1st	2nd	3rd	4th	5th	6th	7th	8th
$ 18.00	$ 19.00	$ 20.00	$ 21.00	$ 22.00	$ 23.00	$ 24.00	$ 25.00

Taper/Drywall Finisher: 750 hour terms at the following wage:

1st	2nd	3rd	4th	5th	6th
$ 20.00	$ 21.00	$ 22.00	$ 23.00	$ 24.00	$ 25.00

Supplemental benefits per hour:

Painter/Decorator and Taper/Drywall Finisher:

1st	2nd	3rd	4th	5th	6th	7th	8th
$ 3.35	$ 5.35	$ 6.35	$ 6.85	$ 7.35	$ 7.85	$ 8.35	$ 8.60

3-4-Buf, Nia, Olean

Painter — 05/01/2026

JOB DESCRIPTION Painter **DISTRICT** 3

ENTIRE COUNTIES
Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Cortland, Delaware, Erie, Genesee, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Niagara, Oneida, Onondaga, Ontario, Orleans, Oswego, Otsego, Schuyler, Seneca, St. Lawrence, Steuben, Tioga, Tompkins, Wayne, Wyoming, Yates

WAGES

Per hour:	07/01/2025	05/01/2026 Additional
Bridge	$ 46.19	$ 2.50
Tunnel	46.19	
Tank*	44.19	

For Bridge Painting Contracts, ALL WORKERS on and off the bridge (including Flagmen) are to be paid Painter's Rate; the contract must be ONLY for Bridge Painting.

*Tank rate applies to indoor and outdoor tanks, tank towers, standpipes, digesters, waste water treatment tanks, chlorinator tanks, etc. Covers all types of tanks including but not limited to steel tanks, concrete tanks, fiberglass tanks, etc.

SHIFT WORK
Note an additional $1.50 per hour is required when the contracting agency or project specification requires any shift to start prior to 6:00am or after 12:00 noon.

SUPPLEMENTAL BENEFITS
Per hour:
$ 31.51

OVERTIME PAY
Exterior work only See (B, E2, E4, F, R) on OVERTIME PAGE.
All other work See (B, F, R) on OVERTIME PAGE.

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wages per hour:

750 hour terms at the following wage:

1st	2nd	3rd	4th	5th	6th
$ 24.00	$ 26.00	$ 28.00	$ 30.00	$ 34.00	$ 38.00

Supplemental benefits per hour:

1st	2nd	3rd	4th	5th	6th
$ 6.60	$ 6.95	$ 7.30	$ 7.65	$ 8.00	$ 8.35

3-4-Bridge, Tunnel, Tank

Painter - Metal Polisher 05/01/2026

JOB DESCRIPTION Painter - Metal Polisher **DISTRICT** 8

ENTIRE COUNTIES
Albany, Allegany, Bronx, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Dutchess, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Kings, Lewis, Livingston, Madison, Monroe, Montgomery, Nassau, New York, Niagara, Oneida, Onondaga, Ontario, Orange, Orleans, Oswego, Otsego, Putnam, Queens, Rensselaer, Richmond, Rockland, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Suffolk, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Westchester, Wyoming, Yates

WAGES

	07/01/2025
Metal Polisher	$ 40.33
Metal Polisher*	41.43
Metal Polisher**	44.33

*Note: Applies on New Construction & complete renovation
** Note: Applies when working on scaffolds over 34 feet.

SUPPLEMENTAL BENEFITS

Per Hour:	07/01/2025
Journeyworker:	
All classification	$ 13.44

OVERTIME PAY
See (B, E, P, T) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 6, 11, 15, 16, 25, 26) on HOLIDAY PAGE
Overtime: See (5, 6, 11, 15, 16, 25, 26) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wages per hour:
One (1) year term at the following wage rates:

	07/01/2025
1st year	$ 20.17
2nd year	22.18
3rd year	24.20
1st year*	$ 20.56
2nd year*	22.62
3rd year*	24.74
1st year**	$ 22.67
2nd year**	24.68
3rd year**	26.70

*Note: Applies on New Construction & complete renovation
** Note: Applies when working on scaffolds over 34 feet.

Supplemental benefits:
Per hour:

1st year	$ 8.94
2nd year	8.94
3rd year	8.94

8-8A/28A-MP

Plumber — 05/01/2026

JOB DESCRIPTION Plumber **DISTRICT** 3

ENTIRE COUNTIES
Cattaraugus, Chautauqua, Erie, Niagara, Wyoming

PARTIAL COUNTIES
Allegany: Only the Townships of Allen, Alma, Amity, Angelica, Belfast, Bolivar, Caneadea, Centerville, Clarksville, Cuba, Genesee, Friendship, Granger, Hume, New Hudson, Rushford, Wirt and that portion of Scio which lies west of Rt. 19.
Genesee: Only the Townships of Alabama, Alexander, Batavia, Darien, Elba, Oakfield, Pembroke and the City of Batavia.
Orleans: Only the Townships of Ridgeway, Shelby and Yates.

WAGES
Per hour: 07/01/2025

Plumber	$ 43.53
Steamfitter	$ 43.53

Note - Add 10% (ten percent) to wage when HAZMAT training is required or when OSHA compliant respirator protection is required.

SHIFT WORK
Additional $1.75 for time worked on second shift 4:30pm - 12:30am
Additional $2.00 for time worked on third shift 12:30am - 8:00am

SUPPLEMENTAL BENEFITS
Per hour:
$ 30.15
Note - $6.24 of this amount must be paid at the same premium as the wage.

OVERTIME PAY
See (*B, **E, Q) on OVERTIME PAGE
* Double time after 11 hours per day on Weekdays.
** Double time after 10 hours per day on Saturday.

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 16) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wages per hour:

One year terms at the following percentage of Journeyman's wage:

1st	2nd	3rd	4th	5th
50%	60%	70%	75%	90%

Note - Add 10% (ten-percent) to wage when HAZMAT training is required or when OSHA compliant respirator protection is required.

Supplemental benefits per hour:

$ 25.23
Note - $6.24 of this amount must be paid at the same premium as the wage.

3-22-P

Roofer — 05/01/2026

JOB DESCRIPTION Roofer **DISTRICT** 3

ENTIRE COUNTIES
Erie, Genesee, Niagara, Orleans, Wyoming

WAGES
Per hour: 07/01/2025

Asbestos Removal	$ 38.96
Slate, Tile	36.11
Precast tile / slabs	36.11
Crete / gypsum planks	36.11
Damp and waterproofer	35.96
Composition, sprayers,	35.96
Asphalt mastic,	35.96
Steep roofers	35.96

SHIFT WORK
When shift work is mandated either in the job specification or by the contracting agency the following premiums apply:
15.0% of hourly rate for second shift

20.0% of hourly rate for third shift

SUPPLEMENTAL BENEFITS
Per hour:

$ 27.31

OVERTIME PAY
See (B, *E, **E2, Q) on OVERTIME PAGE
* and ** Double time after 8 hours on Saturday.

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wages per hour:

Hour terms at the following percentage of Journeyman's wage:

0 to 999	to 1499	to 1999	to 2499	to 2999	to 3499	to 4499
65%	70%	75%	80%	85%	90%	95%

Supplemental benefits per hour:

0 to 999	to 1499	to 1999	to 2499	to 2999	to 3499	to 4499
$ 11.06	$ 16.04	$ 16.34	$ 24.22	$ 24.99	$ 25.76	$ 26.54

3-74

Sheetmetal Worker — 05/01/2026

JOB DESCRIPTION Sheetmetal Worker **DISTRICT** 3

ENTIRE COUNTIES
Erie, Genesee, Niagara, Orleans, Wyoming

WAGES
Per hour: 07/01/2025

Sheet Metal Worker	$ 40.55

Additional $0.50 per hour for work more than 30" above floor on boatswain chair.
Additional $1.00 per hour for work in "Hot" areas of atomic laboratories, atomic plants, or any premises where radio-active materials are stored or handled and personal protective equipment is required.
Additional $1.00 per hour for work when required to have 40-hour HAZMAT training or the use of OSHA compliant respirator is required.

SHIFT WORK
When shift work is mandated either in the job specification or by the contracting agency the following premiums apply:
Shift Premium per hour:

Second Shift	$ 3.25
Third Shift	$ 5.00

Registered Apprentices
When shift work is mandated either in the job specification or by the contracting agency the following premiums apply;
Shift Premium per hour:

Second Shift	
1st term	$ 1.46
2nd term	$ 1.63
3rd term	$ 1.79
4th term	$ 2.28
5th term	$ 2.60
Third Shift	
1st term	$ 2.25
2nd term	$ 2.50
3rd term	$ 2.75
4th term	$ 3.50
5th term	$ 4.00

SUPPLEMENTAL BENEFITS
Per hour:

$ 29.98*

* Note - $19.16 of this amount must be paid at the same premium as the wages per overtime hours.

OVERTIME PAY
See (B, E, E2, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 16) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wages per hour:
One year terms at the following wage:

1st term	$ 21.30	
2nd term	26.10	
3rd term	28.79	
4th term	30.47	
5th term	33.83	

Supplemental benefits per hour:

1st term	$ 18.18	Note - $8.36 of this amount must be paid at the same premium as the wage.
2nd term	22.34	Note - $12.52 of this amount must be paid at the same premium as the wage.
3rd term	27.55	Note - $16.73 of this amount must be paid at the same premium as the wage.
4th term	27.90	Note - $17.08 of this amount must be paid at the same premium as the wage.
5th term	28.59	Note - $17.77 of this amount must be paid at the same premium as the wage.

3-71

Sprinkler Fitter — 05/01/2026

JOB DESCRIPTION Sprinkler Fitter **DISTRICT** 1

ENTIRE COUNTIES
Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Orleans, Oswego, Otsego, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Tioga, Tompkins, Washington, Wayne, Wyoming, Yates

WAGES
Per hour 07/01/2025

Sprinkler Fitter $ 45.06

SUPPLEMENTAL BENEFITS
Per hour

Journeyworker $ 29.41

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE
Note: When a holiday falls on Sunday, the following Monday shall be considered a holiday and all work performed on either day shall be at the double time rate. When a holiday falls on Saturday, the preceding Friday shall be considered a holiday and all work performed on either day shall be at the double time rate.

REGISTERED APPRENTICES
Wages per hour

One Half Year terms at the following wage.

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
$ 23.28	$ 25.98	$ 28.15	$ 30.31	$ 31.94	$ 34.64	$ 36.81	$ 38.97	$ 41.14	$ 43.30

Supplemental Benefits per hour

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
$ 9.57	$ 9.57	$ 21.49	$ 21.49	$ 21.74	$ 21.74	$ 21.74	$ 21.74	$ 21.74	$ 21.74

1-669

Teamster - Building / Heavy&Highway — 05/01/2026

JOB DESCRIPTION Teamster - Building / Heavy&Highway **DISTRICT** 3

ENTIRE COUNTIES
Erie, Niagara

PARTIAL COUNTIES
Genesee: Only in the Townships of Alabama, Darien and Pembroke.
Orleans: Only the Townships of Ridgeway, Shelby and Yates.
Wyoming: Only in the Townships of Arcade, Bennington, Java and Sheldon.

WAGES
GROUP 1: Warehousemen, Yardmen, Truck Helpers, Pickups, Panel Trucks, Flatboy Material Trucks (straight jobs), Single Axle Dump Trucks, Dumpsters, Material Checkers and Receivers, Greasers, Truck Tiremen, Mechanics Helpers and Parts Chasers.

GROUP 2: Off Road Tandems and Batch Trucks, Mechanics, Dispatcher.

GROUP 3: Semi-Trailers, Low-Boy Trucks, Asphalt Distributor Trucks and Agitator, Mixer Trucks and dumpcrete type vehicles, Truck Mechanic, Fuel and Water Trucks

GROUP 4: Specialized Earth Moving Equipment, Euclid type, or similar off-highway, where not self-loading, Straddle (Ross) Carrier, and self -contained concrete mobile truck.

GROUP 5: Off-highway Tandem Back-Dump, Twin Engine Equipment and Double-Hitched Equipment where not self-loading.

Per hour:	07/01/2025	07/01/2026 Additional	07/01/2027 Additional
ALL GROUPS	$ 49.23	$ 3.25	$ 4.00

Add $2.00 when required to use personal protection when performing hazardous waste removal work.

SHIFT WORK
An additional $4.00 per hour is required when a single irregular work shift starting any time from 3:30PM to 1:00AM is mandated either in the job specification or by the contracting agency.

SUPPLEMENTAL BENEFITS
Per hour:
$ 17.30*
*Note - Only $ 8.75 per hour needs to be paid for overtime hours.

OVERTIME PAY
See (B, G, P) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 6) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE

3-449

Teamster - Building / Heavy&Highway — 05/01/2026

JOB DESCRIPTION Teamster - Building / Heavy&Highway **DISTRICT** 3

ENTIRE COUNTIES
Erie, Niagara

WAGES

Per hour:	07/01/2025
Dump Truck Operator*	$ 30.00

*Does not include Single Axle Dump Trucks (see Teamster Group 1).
*Does not include Off-highway Dump Trucks (see Teamster Groups 2-5).

SUPPLEMENTAL BENEFITS
Per hour:
$ 2.02

OVERTIME PAY
See (B, B2, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 6) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE

3-449d-DT

Welder — 05/01/2026

JOB DESCRIPTION Welder **DISTRICT** 1

ENTIRE COUNTIES

Albany, Allegany, Bronx, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Dutchess, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Kings, Lewis, Livingston, Madison, Monroe, Montgomery, Nassau, New York, Niagara, Oneida, Onondaga, Ontario, Orange, Orleans, Oswego, Otsego, Putnam, Queens, Rensselaer, Richmond, Rockland, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Suffolk, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Westchester, Wyoming, Yates

WAGES

Per hour 07/01/2025

Welder: To be paid the same rate of the mechanic performing the work.*

*EXCEPTION: If a specific welder certification is required, then the 'Certified Welder' rate in that trade tag will be paid.

OVERTIME PAY

HOLIDAY

1-As Per Trade

Overtime Codes

Following is an explanation of the code(s) listed in the OVERTIME section of each classification contained in the attached schedule. Additional requirements may also be listed in the HOLIDAY section.

NOTE: Supplemental Benefits are 'Per hour worked' (for each hour worked) unless otherwise noted

(AA)	Time and one half of the hourly rate after 7 and one half hours per day
(A)	Time and one half of the hourly rate after 7 hours per day
(B)	Time and one half of the hourly rate after 8 hours per day
(B1)	Time and one half of the hourly rate for the 9th & 10th hours week days and the 1st 8 hours on Saturday. Double the hourly rate for all additional hours
(B2)	Time and one half of the hourly rate after 40 hours per week
(B3)	Time and one half of the hourly rate after 40 straight hours per week
(C)	Double the hourly rate after 7 hours per day
(C1)	Double the hourly rate after 7 and one half hours per day
(D)	Double the hourly rate after 8 hours per day
(D1)	Double the hourly rate after 9 hours per day
(E)	Time and one half of the hourly rate on Saturday
(E1)	Time and one half 1st 4 hours on Saturday; Double the hourly rate all additional Saturday hours
(E2)	Saturday may be used as a make-up day at straight time when a day is lost during that week due to inclement weather
(E3)	Between November 1st and March 3rd Saturday may be used as a make-up day at straight time when a day is lost during that week due to inclement weather, provided a given employee has worked between 16 and 32 hours that week
(E4)	Sunday may be used as a make-up day at straight time when a day is lost during that week due to inclement weather
(E5)	Double time after 8 hours on Saturdays
(F)	Time and one half of the hourly rate on Saturday and Sunday
(G)	Time and one half of the hourly rate on Saturday and Holidays
(H)	Time and one half of the hourly rate on Saturday, Sunday, and Holidays
(I)	Time and one half of the hourly rate on Sunday
(J)	Time and one half of the hourly rate on Sunday and Holidays
(K)	Time and one half of the hourly rate on Holidays
(L)	Double the hourly rate on Saturday
(M)	Double the hourly rate on Saturday and Sunday
(N)	Double the hourly rate on Saturday and Holidays
(O)	Double the hourly rate on Saturday, Sunday, and Holidays
(P)	Double the hourly rate on Sunday
(Q)	Double the hourly rate on Sunday and Holidays
(R)	Double the hourly rate on Holidays

(S)	Two and one half times the hourly rate for Holidays
(S1)	Two and one half times the hourly rate the first 8 hours on Sunday or Holidays One and one half times the hourly rate all additional hours.
(T)	Triple the hourly rate for Holidays
(U)	Four times the hourly rate for Holidays
(V)	Including benefits at SAME PREMIUM as shown for overtime
(W)	Time and one half for benefits on all overtime hours.
(X)	Benefits payable on Paid Holiday at straight time. If worked, additional benefit amount will be required for worked hours. (Refer to other codes listed.)

Holiday Codes

PAID Holidays:

Paid Holidays are days for which an eligible employee receives a regular day's pay, but is not required to perform work. If an employee works on a day listed as a paid holiday, this remuneration is in addition to payment of the required prevailing rate for the work actually performed.

OVERTIME Holiday Pay:

Overtime holiday pay is the premium pay that is required for work performed on specified holidays. It is only required where the employee actually performs work on such holidays. The applicable holidays are listed under HOLIDAYS: OVERTIME. The required rate of pay for these covered holidays can be found in the OVERTIME PAY section listings for each classification.

Following is an explanation of the code(s) listed in the HOLIDAY section of each classification contained in the attached schedule. The Holidays as listed below are to be paid at the wage rates at which the employee is normally classified.

(1)	None
(2)	Labor Day
(3)	Memorial Day and Labor Day
(4)	Memorial Day and July 4th
(5)	Memorial Day, July 4th, and Labor Day
(6)	New Year's, Thanksgiving, and Christmas
(7)	Lincoln's Birthday, Washington's Birthday, and Veterans Day
(8)	Good Friday
(9)	Lincoln's Birthday
(10)	Washington's Birthday
(11)	Columbus Day
(12)	Election Day
(13)	Presidential Election Day
(14)	1/2 Day on Presidential Election Day
(15)	Veterans Day
(16)	Day after Thanksgiving
(17)	July 4th
(18)	1/2 Day before Christmas
(19)	1/2 Day before New Years
(20)	Thanksgiving
(21)	New Year's Day
(22)	Christmas
(23)	Day before Christmas
(24)	Day before New Year's
(25)	Presidents' Day
(26)	Martin Luther King, Jr. Day
(27)	Memorial Day
(28)	Easter Sunday

(29) Juneteenth

New York State Department of Labor - Bureau of Public Work
State Office Building Campus
Building 12 - Room 130
Albany, New York 12226

REQUEST FOR WAGE AND SUPPLEMENT INFORMATION

As Required by Articles 8 and 9 of the NYS Labor Law

Fax (518) 485-1870 or mail this form for new schedules or for determination for additional occupations.

This Form Must Be Typed

Submitted By: (Check Only One) ☐ Contracting Agency ☐ Architect or Engineering Firm ☐ Public Work District Office Date:

A. Public Work Contract to be let by: (Enter Data Pertaining to Contracting/Public Agency)

1. Name and complete address ☐ (Check if new or change)

Telephone Fax

E-Mail:

2. NY State Units (see Item 5).

- ☐ 01 DOT
- ☐ 02 OGS
- ☐ 03 Dormitory Authority
- ☐ 04 State University Construction Fund
- ☐ 05 Mental Hygiene Facilities Corp.
- ☐ 06 OTHER N.Y. STATE UNIT
- ☐ 07 City
- ☐ 08 Local School District
- ☐ 09 Special Local District, i.e., Fire, Sewer, Water District
- ☐ 1O Village
- ☐ 11 Town
- ☐ 12 County
- ☐ 13 Other Non-N.Y. State (Describe)

3. SEND REPLY TO ☐ (check if new or change)
Name and complete address:

Telephone Fax

E-Mail:

4. SERVICE REQUIRED. Check appropriate box and provide project information.

☐ New Schedule of Wages and Supplements.

APPROXIMATE BID DATE :

☐ Additional Occupation and/or Redetermination

PRC NUMBER ISSUED PREVIOUSLY FOR THIS PROJECT :

OFFICE USE ONLY

B. PROJECT PARTICULARS

5. Project Title _____

Description of Work _____

Contract Identification Number _____

Note: For NYS units, the OSC Contract No. _____

6. Location of Project:
Location on Site _____

Route No/Street Address _____

Village or City _____

Town _____

County _____

7. Nature of Project - Check One:

- ☐ 1. New Building
- ☐ 2. Addition to Existing Structure
- ☐ 3. Heavy and Highway Construction (New and Repair)
- ☐ 4. New Sewer or Waterline
- ☐ 5. Other New Construction (Explain)
- ☐ 6. Other Reconstruction, Maintenance, Repair or Alteration
- ☐ 7. Demolition
- ☐ 8. Building Service Contract

8. OCCUPATION FOR PROJECT :

- ☐ Construction (Building, Heavy Highway/Sewer/Water)
- ☐ Tunnel
- ☐ Residential
- ☐ Landscape Maintenance
- ☐ Elevator maintenance
- ☐ Exterminators, Fumigators
- ☐ Fire Safety Director, NYC Only
- ☐ Fuel Delivery
- ☐ Guards, Watchmen
- ☐ Janitors, Porters, Cleaners, Elevator Operators
- ☐ Moving furniture and equipment
- ☐ Trash and refuse removal
- ☐ Window cleaners
- ☐ Other (Describe)

9. Does this project comply with the Wicks Law involving separate bidding? YES ☐ NO ☐

10. Name and Title of Requester

Signature

SEE PAGE TWO FOR LAWS RELATING TO PUBLIC WORK CONTRACTS

NEW YORK STATE DEPARTMENT OF LABOR
Bureau of Public Work - Debarment List

LIST OF EMPLOYERS INELIGIBLE TO BID ON OR BE AWARDED ANY PUBLIC WORK CONTRACT

Under Article 8 and Article 9 of the NYS Labor Law, a contractor, sub-contractor and/or its successor shall be debarred and ineligible to submit a bid on or be awarded any public work or public building service contract/sub-contract with the state, any municipal corporation or public body for a period of five (5) years from the date of debarment when:

- Two (2) final determinations have been rendered within any consecutive six-year (6) period determining that such contractor, sub-contractor and/or its successor has WILLFULLY failed to pay the prevailing wage and/or supplements;
- One (1) final determination involves falsification of payroll records or the kickback of wages and/or supplements.

The agency issuing the determination and providing the information, is denoted under the heading 'Fiscal Officer'. DOL = New York State Department of Labor; NYC = New York City Comptroller's Office; AG = New York State Attorney General's Office; DA = County District Attorney's Office.

Debarment Database: To search for contractors, sub-contractors and/or their successors debarred from bidding or being awarded any public work contract or subcontract under NYS Labor Law Articles 8 and 9, or under NYS Workers' Compensation Law Section 141-b, access the database at this link: https://apps.labor.ny.gov/EDList/searchPage.do

For inquiries please call 518-457-5589.

NYSDOL Bureau of Public Work Debarment List 04/24/2026

Article 8

AGENCY	Fiscal Officer	FEIN	EMPLOYER NAME	EMPLOYER DBA NAME	ADDRESS	DEBARMENT START DATE	DEBARMENT END DATE
DOL	DOL	*****5754	0369 CONTRACTORS, LLC		515 WEST AVE UNIT PH 13NORWALK CT 06850	05/12/2021	05/12/2026
DOL	DOL	*****5784	A.J.M. TRUCKING, INC.		PO BOX 2064 MONROE NY 10950	02/12/2024	02/12/2029
DOL	DOL		AKHLAQ OULAKH		4307 28TH AVE ASTORIA NY 11103	10/11/2024	10/11/2029
DOL	DOL		ALEXANDER DELISA		411 THEODORE FREMND SUITE 206RYE NY 10580	09/03/2025	09/03/2030
DOL	NYC		ALL COUNTY SEWER & DRAIN, INC.		7 GREENFIELD DR WARWICK NY 10990	03/25/2022	03/25/2027
DOL	DOL	*****8387	AMERICAN PAVING & MASONRY, CORP.		8 FOREST AVE GLEN COVE NY 11542	05/24/2024	05/24/2029
DOL	DOL	*****8654	AMERICAN PAVING, INC.		8 FORREST AVE. GLEN COVE NY 11542	05/24/2024	05/24/2029
DOL	NYC	*****8017	AMIN ELECTRICAL CORP.		97-23 218TH STREET QUEENS VILLAGE NY 11429	12/04/2025	12/04/2030
DOL	DOL		ANGELO GARCIA		515 WEST AVE UNIT PH 13NORWALK CT 06850	05/12/2021	05/12/2026
DOL	DOL		ANGELO STANCO		8 FOREST AVE. GLEN COVE NY 11542	05/24/2024	05/24/2029
DOL	DOL		ANGELO TONDO		449 WEST MOMBSHA ROAD MONROE NY 10950	06/06/2022	06/06/2027
DOL	DOL	*****4231	ANKER'S ELECTRIC SERVICE, INC.		10 SOUTH 5TH ST LOCUST VALLEY NY 11560	09/26/2022	09/26/2027
DOL	DOL		ANTHONY CASALE		20 HEATHER RIDGE ROAD TROY NY 12180	05/20/2025	05/20/2030
DOL	DOL		ANTHONY MONGELLI		PO BOX 2064 MONROE NY 10950	02/12/2024	02/12/2029
DOL	DOL	*****8421	B & B DRYWALL, INC		206 WARREN AVE APT 1WHITE PLAINS NY 10603	12/14/2021	12/14/2026
DOL	DOL	*****3932	B ROC CONSTRUCTION INC		7307 WOODSIDE ROAD VICTOR NY 14564	05/06/2025	05/06/2030
DOL	DA	*****2404	BJA RENOVATION, CORP		33 DOLLARD DR NORTH BABYLON NY 11703	03/19/2025	03/19/2030
DOL	DOL	*****5078	BLACK RIVER TREE REMOVAL, LLC		29807 ANDREWS ROAD BLACK RIVER NY 13032	10/17/2023	10/17/2028
DOL	DOL		C.M.C CONTRACTORS, INC.		500 WEST PUTNAM AVE SUITE 400GREENWICH CT 06830	09/03/2025	09/03/2030
DOL	DOL	*****5161	CALADRI DEVELOPMENT CORP.		1223 PARK ST. PEEKSKILL NY 10566	05/17/2021	05/17/2026
DOL	DOL	*****3391	CALI ENTERPRISES, INC.		1223 PARK STREET PEEKSKILL NY 10566	05/17/2021	05/17/2026
DOL	DOL		CARLOS F. ESCOBAR		411 THEODORE FREMD AVE SUITE 206RYE NY 10580	09/03/2025	09/03/2030
DOL	DOL		CARLOS FIGUEROA		411 THEODORE FREMND AVE SUITE 206RYE NY 10580	09/03/2025	09/03/2030
DOL	DOL	*****4155	CASA BUILDERS, INC.	FRIEDLANDER CONSTRUCTION	64 N PUTT CONNERS ROAD NEW PALTZ NY 12561	05/10/2023	05/10/2028
DOL	AG	*****7247	CENTURY CONCRETE CORP		2375 RAYNOR ST RONKONKOMA NY 11779	08/04/2021	08/04/2026
DOL	DOL		CESAREO TULA		120 SEARS AVE ELMSFORD NY 10523	09/26/2025	09/26/2030
DOL	DOL	*****2292	CHAMPION MAINTENANCE CONTRACTORS, INC.		211 SOUTH RIDGE STREET RYE BROOK NY 10573	09/03/2025	09/03/2030
DOL	NYC	*****2117	CHARAN ELECTRICAL ENTERPRISES		9-11 40TH AVENUE LONG ISLAND CITY NY 11101	09/26/2023	09/26/2028
DOL	DOL		CHARLES CASALE		55 MAIN AVENUE WYNANTSKILL NY 12198	05/20/2025	05/20/2030
DOL	DOL		CHARLES CASALE		55 MAIN AVENUE WYNANTSKILL NY 12198	05/20/2025	05/20/2030
DOL	DOL		CHRISTOPHER PEROSI		5507 NESCONSET HIGHWAY MT. SINAI NY 11766	07/17/2025	07/17/2030
DOL	DOL	*****2281	CORRAO TRUCKING, INC.		PO BOX 393 NANUET NY 10954	09/17/2024	09/17/2029
DOL	DOL		CRAIG JOHANSEN		10 SOUTH 5TH ST LOCUST VALLEY NY 11560	09/26/2022	09/26/2027
DOL	DOL	*****7619	DANCO CONSTRUCTION UNLIMITED INC.		485 RAFT AVENUE HOLBROOK NY 11741	10/19/2021	10/19/2026

DOL	DOL		DANIEL DELISA		211 SOUTH RIDGE STREET RYE BROOK NY 10573	09/03/2025	09/03/2030
DOL	DOL		DANIEL ROBERT MCNALLY		7 GREENFIELD DRIVE WARWICK NY 10990	03/25/2022	03/25/2027
DOL	DOL		DARWIN PEGUESE		6400 BALTIMORE NATIONAL SUITE 602CANTONSVILLE NY 21228	10/24/2024	10/24/2029
DOL	DOL		DAVID FRIEDLANDER		64 NORTH PUTT CORNERS RD NEW PALTZ NY 12561	05/10/2023	05/10/2028
DOL	DOL		DENISE NAGLE		36 OAKWOOD TRAIL S AL MONROE NY 10950	10/29/2025	10/29/2030
DOL	DOL		DINA TAYLOR		64 N PUTT CONNERS RD NEW PALTZ NY 12561	05/10/2023	05/10/2028
DOL	AG		EDWIN HUTZLER		23 NORTH HOWELLS RD BELLPORT NY 11713	08/04/2021	08/04/2026
DOL	DA		EDWIN HUTZLER		2375 RAYNOR STREET RONKONKOMA NY 11779	08/04/2021	08/04/2026
DOL	DOL	*****2337	EGL DRAINAGE SOLUTION & REPAIRS LLC		5507 NESCONSET HIGHWAY MT. SINAI NY 11766	07/17/2025	07/17/2030
DOL	DOL	*****0780	EMES HEATING & PLUMBING CONTR		5 EMES LANE MONSEY NY 10952	01/20/2002	01/20/3002
DOL	DOL		EMIL KISZKO		84 DIAMOND ST BROOKLYN NY 11222	07/18/2024	07/18/2029
DOL	DOL	*****3298	EMJACK CONSTRUCTION CORP.		84 DIAMOND ST BROOKLYN NY 11222	07/18/2024	07/18/2029
DOL	DOL	*****3298	EMJACK CONSTRUCTION LLC		4192 SIR ANDREW CIRCLE DOYLESTOWN PA 18902	07/18/2024	07/18/2029
DOL	NYC		ENRICO MANETTA		101 MALBA DR. WHITESTONE NY 11357	04/01/2026	04/01/2031
DOL	DOL		EUGENIUSZ "GINO" KUCHAR		195 KINGSLAND AVE BROOKLYN NY 11222	12/22/2023	12/22/2028
DOL	DA		FREDERICK HUTZLER		2375 RAYNOR STREET RONKONKOMA NY 11779	08/04/2021	08/04/2026
DOL	DOL	*****2998	G.E.M. AMERICAN CONSTRUCTION CORP.		195 KINGSLAND AVE BROOKLYN NY 11222	12/22/2023	12/22/2028
DOL	DA		GEORGE LUCEY		150 KINGS STREET BROOKLYN NY 11231	01/19/1998	01/19/2998
DOL	NYC		GHANSHYAM AMIN		97-23 218TH STREET QUEENS VILLAGE NY 11429	12/04/2025	12/04/2030
DOL	DA		GIOVANNA TRAVALJA		3735 9TH ST LONG ISLAND CITY NY 11101	01/05/2023	01/05/2028
DOL	DA		GIOVANNI NAPOLITANO		2501 BAYVIEW AVENUE WANTAGH NY 11793	02/21/2024	02/21/2029
DOL	DA	*****0213	GORILLA CONTRACTING GROUP, LLC		505 MANHATTAN AVE WEST BABYLON NY 11704	10/05/2023	10/05/2028
DOL	DA	*****4760	GTX CONSTRUCTION ASSOCIATES, CORP		2501 BAYVIEW AVE WANTAGH NY 11793	02/21/2024	02/21/2029
DOL	DOL		HENRY WICKE A/K/A HENRY WICKE, JR.		36 OAKWOOD TRAIL S AL MONROE NY 10950	10/29/2025	10/29/2030
DOL	DOL		HERBERT CLEMEN		42 FOWLER AVENUE CORTLAND MANOR NY 10567	01/24/2023	01/24/2028
DOL	DOL		HERBERT CLEMEN		42 FOWLER AVENUE CORTLAND MANOR NY 10567	10/25/2022	10/25/2027
DOL	DOL	*****6961	HUNTER ELEVATOR COMPANY, INC.		36 OAKWOOD TRAIL S AL MONROE NY 10950	10/29/2025	10/29/2030
DOL	DOL	*****2397	ISLAND BREEZE MARINE, INC.		6400 BALTIMORE NATIONAL CANTONSVILLE MD 21228	10/24/2024	10/24/2029
DOL	DOL	*****5010	J. LINDSLEY ENTERPRISE, LLC		1002 STATE ROUTE 176 FULTON NY 13069	07/30/2025	07/30/2030
DOL	DOL	*****0241	J. LINDSLEY ROOFING, LLC		211 NORTH 2ND STREET FULTON NY 13069	07/30/2025	07/30/2030
DOL	DOL		J.M.J CONSTRUCTION		151 OSTRANDER AVENUE SYRACUSE NY 13205	11/21/2022	11/21/2027
DOL	DOL		J.R. NELSON CONSTRUCTION		531 THIRD STREET ALBANY NY 12206	11/07/2023	11/07/2028
DOL	DOL		J.R. NELSON CONSTRUCTION		531 THIRD STREET ALBANY NY 12206	12/22/2022	12/22/2027
DOL	DOL		J.R. NELSON CONSTRUCTION		531 THIRD STREET ALBANY NY 12206	10/25/2022	10/25/2027
DOL	DOL		J.R. NELSON, LLC		531 THIRD STREET ALBANY NY 12206	12/22/2022	12/22/2027
DOL	DOL		J.R. NELSON, LLC		531 THIRD STREET ALBANY NY 12206	11/07/2023	11/07/2028
DOL	DOL		J.R. NELSON, LLC		531 THIRD STREET ALBANY NY 12206	10/25/2022	10/25/2027

DOL	DOL		J.R.N COMPANIES, LLC		531 THIRD STREET ALBANY NY 12206	12/12/2022	12/12/2027
DOL	DOL		J.R.N COMPANIES, LLC		531 THIRD STREET ALBANY NY 12206	11/07/2023	11/07/2028
DOL	DOL		J.R.N COMPANIES, LLC		531 THIRD STREET ALBANY NY 12206	10/25/2022	10/25/2027
DOL	DOL	*****1147	J.R.N. CONSTRUCTION, LLC		531 THIRD ST ALBANY NY 12206	11/07/2023	11/07/2028
DOL	DOL	*****1147	J.R.N. CONSTRUCTION, LLC		531 THIRD ST ALBANY NY 12206	12/22/2022	12/22/2027
DOL	DOL	*****1147	J.R.N. CONSTRUCTION, LLC		531 THIRD ST ALBANY NY 12206	10/25/2022	10/25/2027
DOL	DOL		JAMES J. BAKER		7901 GEE ROAD CANASTOTA NY 13032	08/17/2021	08/17/2026
DOL	DOL		JAMES LINDSLEY		211 NORTH 2ND STREET FULTON NY 13069	07/30/2025	07/30/2030
DOL	DOL		JASON P. RACE		3469 STATE RT. 69 PERISH NY 13131	09/29/2021	09/29/2026
DOL	DOL		JASON P. RACE		3469 STATE RT. 69 PERISH NY 13131	02/09/2022	02/09/2027
DOL	DOL		JASON P. RACE		3469 STATE RT. 69 PERISH NY 13131	11/15/2022	11/15/2027
DOL	DOL		JASON P. RACE		3469 STATE RT. 69 PERISH NY 13131	03/01/2022	03/01/2027
DOL	DOL	*****7993	JBS DIRT, INC.		7901 GEE ROAD CANASTOTA NY 13032	08/17/2021	08/17/2026
DOL	DOL	*****2435	JEFFEL D. JOHNSON	JMJ7 AND SON	5553 CAIRNSTRAIL CLAY NY 13041	11/21/2022	11/21/2027
DOL	DOL		JEFFEL JOHNSON ELITE CARPENTER REMODEL AND CONSTRUCTION		C2 EVERGREEN CIRCLE LIVERPOOL NY 13090	11/21/2022	11/21/2027
DOL	DOL	*****2435	JEFFREY M. JOHNSON	JMJ7 AND SON	5553 CAIRNS TRAIL CLAY NY 13041	11/21/2022	11/21/2027
DOL	DOL		JENNIFER LINDSLEY		211 NORTH 2ND STREET FULTON NY 13069	07/30/2025	07/30/2030
DOL	DOL		JERRY DASTON		36 OAKWOOD TRAIL S AL MONROE NY 10950	10/29/2025	10/29/2030
DOL	DOL		JIM PLAUGHER		17613 SANTE FE LINE ROAD WAYNEFIELD OH 45896	07/16/2021	07/16/2026
DOL	DOL		JMJ7 & SON CONSTRUCTION, LLC		5553 CAIRNS TRAIL LIVERPOOL NY 13041	11/21/2022	11/21/2027
DOL	DOL		JMJ7 AND SONS CONTRACTORS		5553 CAIRNS TRAIL CLAY NY 13041	11/21/2022	11/21/2027
DOL	DOL		JMJ7 CONTRACTORS		7014 13TH AVENUE BROOKLYN NY 11228	11/21/2022	11/21/2027
DOL	DOL		JMJ7 CONTRACTORS AND SONS		5553 CAIRNS TRAIL CLAY NY 13041	11/21/2022	11/21/2027
DOL	DOL		JMJ7 CONTRACTORS, LLC		5553 CAIRNS TRAIL CLAY NY 13041	11/21/2022	11/21/2027
DOL	DOL		JOHN NAGLE A/K/A JOHN NAGLE, JR.		36 OAKWOOD TRAIL S AL MONROE NY 10950	10/29/2025	10/29/2030
DOL	DOL		JONATHAN DELISA		411 THEODORE FREMND AVE SUITE 206RYE NY 10580	09/03/2025	09/03/2030
DOL	DOL		JORGE FIGUEROA		411 THEODORE FRMND AVE SUITE 206RYE NY 10580	09/03/2025	09/03/2030
DOL	DOL		JORGE RAMOS		8970 MIKE GARCIA DR MANASSAS VA 20109	07/16/2021	07/16/2026
DOL	DA		JOSEPH DEMASCO		33 DOLLARD DRIVE NORTH BABYLON NY 11703	01/30/2026	01/30/2031
DOL	DA		JOSEPH DEMASCO		33 DOLLARD DRIVE NORTH BABYLON NY 11703	03/19/2025	03/19/2030
DOL	DOL		JOSEPH HALL		937 US ROUTE 11 CENTRAL SQUARE NY 13036	10/21/2024	10/21/2029
DOL	DOL	*****2271	JOSEPH HALL COMPANIES LLC		937 US ROUTE 11 CENTRAL SQUARE NY 13036	10/21/2024	10/21/2029
DOL	DOL		JOSEPH K. SALERNO		1010 TILDEN AVE UTICA NY 13501	07/24/2023	07/24/2028
DOL	DOL		JOSEPH K. SALERNO II		1010 TILDEN AVE UTICA NY 13501	07/24/2023	07/24/2028
DOL	DOL	*****5116	JP RACE PAINTING, INC. T/A RACE PAINTING		3469 STATE RT. 69 PERISH NY 13131	02/09/2022	02/09/2027
DOL	DOL	*****5116	JP RACE PAINTING, INC. T/A RACE PAINTING		3469 STATE RT. 69 PERISH NY 13131	11/15/2022	11/15/2027
DOL	DOL	*****5116	JP RACE PAINTING, INC. T/A RACE PAINTING		3469 STATE RT. 69 PERISH NY 13131	09/29/2021	09/29/2026

DOL	DOL	*****5116	JP RACE PAINTING, INC. T/A RACE PAINTING		3469 STATE RT. 69 PERISH NY 13131	03/01/2022	03/01/2027
DOL	DOL	*****5116	JP RACE PAINTING, INC. T/A RACE PAINTING		3469 STATE RT. 69 PERISH NY 13131	03/01/2022	03/01/2027
DOL	DOL		JRN CONSTRUCTION CO, LLC		1024 BROADWAY ALBANY NY 12204	11/07/2023	11/07/2028
DOL	DOL	*****1147	JRN CONSTRUCTION, LLC		531 THIRD STREET ALBANY NY 12206	10/25/2022	10/25/2027
DOL	DOL	*****1147	JRN CONSTRUCTION, LLC		531 THIRD STREET ALBANY NY 12206	12/22/2022	12/22/2027
DOL	DOL	*****1147	JRN CONSTRUCTION, LLC		531 THIRD STREET ALBANY NY 12206	11/07/2023	11/07/2028
DOL	DOL		JRN PAVING, LLC		531 THIRD STREET ALBANY NY 12206	10/25/2022	10/25/2027
DOL	DOL		JRN PAVING, LLC		531 THIRD STREET ALBANY NY 12206	12/22/2022	12/22/2027
DOL	DOL		JRN PAVING, LLC		531 THIRD STREET ALBANY NY 12206	11/07/2023	11/07/2028
DOL	DOL		JULIUS AND GITA BEHREND		5 EMES LANE MONSEY NY 10952	11/20/2002	11/20/3002
DOL	DOL		KEAN INDUSTRIES, LLC		2345 RT. 52 SUITE 2NHOPEWELL JUNCTION NY 12533	12/18/2023	12/18/2028
DOL	DOL		KEVIN FUNEZ URBINA A/K/A KEVIN FUNEZ		1009 LYNDALE AVE TRENTON NJ 08629	12/16/2024	12/16/2029
DOL	DOL		KIMBERLY F. BAKER		7901 GEE ROAD CANASTOTA NY 13032	08/17/2021	08/17/2026
DOL	DOL	*****8760	KJ&J CONSTRUCTION, LLC		1009 LYNDALE AVE TRENTON NJ 08629	12/16/2024	12/16/2029
DOL	DOL		KMA GROUP II, INC.		29-10 38TH AVENUE LONG ISLAND CITY NY 11101	10/11/2023	10/11/2028
DOL	DOL	*****1833	KMA GROUP INC.		29-10 38TH AVENUE LONG ISLAND CITY NY 11101	10/11/2023	10/11/2028
DOL	DOL		KMA INSULATION, INC.		29-10 38TH AVENUE LONG ISLAND CITY NY 11101	10/11/2023	10/11/2028
DOL	DOL		KRIN HEINEMANN		2345 ROUTE 52, SUITE 2N HOPEWELL JUNCTION NY 12533	12/18/2023	12/18/2028
DOL	NYC		KULWANT S. DEOL		9-11 40TH AVENUE LONG ISLAND CITY NY 11101	09/26/2023	09/26/2028
DOL	DA	*****8816	LAKE CONSTRUCTION AND DEVELOPMENT CORPORATION		150 KINGS STREET BROOKLYN NY 11231	08/19/1998	08/19/2998
DOL	DOL		LEROY E. NELSON JR		531 THIRD ST ALBANY NY 12206	10/25/2022	10/25/2027
DOL	DOL		LEROY E. NELSON JR		531 THIRD ST ALBANY NY 12206	12/22/2022	12/22/2027
DOL	DOL		LEROY E. NELSON JR		531 THIRD ST ALBANY NY 12206	11/07/2023	11/07/2028
DOL	DOL	*****3716	LIGHTNIN ELECTRIC INC.		3418 NORTHERN BLVD SUITE 5-27LONG ISLAND CITY NY 11101	12/13/2024	12/13/2029
DOL	AG	*****3291	LINTECH ELECTRIC, INC.		3006 TILDEN AVE BROOKLYN NY 11226	02/16/2022	02/16/2027
DOL	DOL		LIZETTE PONCE		411 THEODORE FREMND AVE SUITE 206RYE NY 10580	09/03/2025	09/03/2030
DOL	DOL		LOUIS A. CALICCHIA		1223 PARK ST. PEEKSKILL NY 10566	05/17/2021	05/17/2026
DOL	NYC	*****7516	MANCO ENTERPRISES OF NY, INC.		44-17 54TH DR. MASPETH NY 11378	04/01/2026	04/01/2031
DOL	NYC	*****1783	MANETTA ENTERPISES, INC. D/B/A MANETTA INDUSTRIES		44-17 54TH DR. MASPETH NY 11378	04/01/2026	04/01/2031
DOL	DA		MANUEL P TOBIO		150 KINGS STREET BROOKLYN NY 14444	08/19/1998	08/19/2998
DOL	DA		MANUEL TOBIO		150 KINGS STREET BROOKLYN NY 11231	08/19/1998	08/19/2998
DOL	DOL	*****1320	MJC MASON CONTRACTING, INC.		42 FOWLER AVENUE CORTLAND MANOR NY 10567	10/25/2022	10/25/2027
DOL	DOL	*****1320	MJC MASON CONTRACTING, INC.		42 FOWLER AVENUE CORTLAND MANOR NY 10567	01/24/2023	01/24/2028
DOL	DOL		MOHAMMAD MIAN		8269 21ST ST BELLEROSE NY 11426	12/22/2022	12/22/2027
DOL	NYC		NASEER CHAUDHRY		2349 BRAGG STREET BROOKLYN NY 11229	04/22/2025	04/22/2030

DOL	DOL	*****7790	NATIONAL BUILDING & RESTORATION CORP		1010 TILDEN AVE UTICA NY 13501	07/24/2023	07/24/2028
DOL	DOL	*****1797	NATIONAL CONSTRUCTION SERVICES, INC		1010 TILDEN AVE UTICA NY 13501	07/24/2023	07/24/2028
DOL	NYC		NAVIT SINGH		402 JERICHO TURNPIKE NEW HYDE PARK NY 11040	08/10/2022	08/10/2027
DOL	DOL		NELCO CONTRACTING, LLC		1024 BROADWAY ALBANY NY 12204	11/07/2023	11/07/2028
DOL	DA		NICHOLAS BARNETT		33 DOLLARD DR BABYLON NY 11703	03/04/2025	03/04/2030
DOL	DOL		NICHOLAS RAO		411 THEODORE FREMND AVE SUITE 206RYE NY 10580	09/03/2025	09/03/2030
DOL	DA		NICHOLAS T. ANALITIS		505 MANHATTAN AVE WEST BABYLON NY 11704	10/05/2023	10/05/2028
DOL	DOL		NICHOLE E. FRASER A/K/A NICHOLE RACE		3469 STATE RT. 69 PERISH NY 13131	03/01/2022	03/01/2027
DOL	DOL		NICHOLE E. FRASER A/K/A NICHOLE RACE		3469 STATE RT. 69 PERISH NY 13131	11/15/2022	11/15/2027
DOL	DOL		NICHOLE E. FRASER A/K/A NICHOLE RACE		3469 STATE RT. 69 PERISH NY 13131	09/29/2021	09/29/2026
DOL	DOL		NICHOLE E. FRASER A/K/A NICHOLE RACE		3469 STATE RT. 69 PERISH NY 13131	02/09/2022	02/09/2027
DOL	DOL		NIKOLA NTONI		3418 NORTHERN BLVD SUITE 5-27LONG ISLAND CITY NY 11101	12/13/2024	12/13/2029
DOL	NYC	*****6971	NN CONSTRUCTION, INC.		2349 BRAGG STREET BROOKLYN NY 11229	04/22/2025	04/22/2030
DOL	NYC	*****5643	NYC LINE CONTRACTORS, INC.		402 JERICHO TURNPIKE NEW HYDE PARK NY 11040	08/10/2022	08/10/2027
DOL	DOL		PATRICK PENNACCHIO		2345 RT. 52 SUITE 2NHOPEWELL JUNCTION NY 12533	12/18/2023	12/18/2028
DOL	DOL		PATRICK PENNACCHIO		2345 RT. 52 SUITE 2NHOPEWELL JUNCTION NY 12533	12/18/2023	12/18/2028
DOL	DOL	*****4168	PHANTOM CONSTRUCTION CORP.		95-27 116TH STREET QUEENS NY 11419	07/12/2024	07/12/2029
DOL	DOL	*****4168	PHANTOM CONSTRUCTION CORP.		95-27 116TH STREET QUEENS NY 11419	05/28/2024	05/28/2029
DOL	DOL	*****4772	R.W. LOBDELL CONSTRUCTION LLC		635 WEST DRYDEN ROAD FREEVILLE NY 13068	01/31/2025	01/31/2030
DOL	DOL	*****2633	RAW POWER ELECTRIC CORP.		3 PARK CIRCLE MIDDLETOWN NY 10940	07/11/2022	07/11/2027
DOL	DOL		ROBBYE BISSESAR		89-51 SPRINGFIELD BLVD QUEENS VILLAGE NY 11427	01/11/2003	01/11/3003
DOL	DOL		ROMEO WARREN		161 ROBYN RD MONROE NY 10950	07/11/2022	07/11/2027
DOL	DOL		ROSA GARCIA		411 THEODORE FRMND AVE SUITE 206RYE NY 10580	09/03/2025	09/03/2030
DOL	DOL	*****7172	RZ & AL INC.		198 RIDGE AVENUE VALLEY STREAM NY 11581	06/06/2022	06/06/2027
DOL	DOL		SAL FRESINA MASONRY CONTRACTORS, INC.		1935 TEALL AVENUE SYRACUSE NY 13206	07/16/2021	07/16/2026
DOL	DOL		SAL MASONRY CONTRACTORS, INC.		(SEE COMMENTS) SYRACUSE NY 13202	07/16/2021	07/16/2026
DOL	DOL	*****9874	SALFREE ENTERPRISES INC		P.O BOX 14 2821 GARDNER RDPOMPEI NY 13138	07/16/2021	07/16/2026
DOL	DOL		SALVATORE A FRESINA A/K/A SAM FRESINA		107 FACTORY AVE P.O BOX 11070SYRACUSE NY 13218	07/16/2021	07/16/2026
DOL	DOL		SAM FRESINA		107 FACTORY AVE P.O BOX 11070SYRACUSE NY 13218	07/16/2021	07/16/2026
DOL	DA	*****0476	SAMCO ELECTRIC CORP.		3735 9TH ST LONG ISLAND CITY NY 11101	01/05/2023	01/05/2028
DOL	DA		SILVANO TRAVALJA		3735 9TH ST LONG ISLAND CITY NY 11101	01/05/2023	01/05/2028
DOL	DOL	*****0440	SOLAR GUYS INC.		8970 MIKE GARCIA DR MANASSAS VA 20109	07/16/2021	07/16/2026
DOL	NYC	*****3661	SPANIER BUILDING MAINTENANCE CORP		200 OAK DRIVE SYOSSET NY 11791	03/14/2022	03/14/2027
DOL	DOL		STANADOS KALOGELAS		485 RAFT AVENUE HOLBROOK NY 11741	10/19/2021	10/19/2026
DOL	DOL	*****3496	STAR INTERNATIONAL INC		89-51 SPRINGFIELD BLVD QUEENS VILLAGE NY 11427	08/11/2003	08/11/3003

NYSDOL Bureau of Public Work Debarment List 04/24/2026

Article 8

DOL	DOL	*****9528	STEEL-IT, LLC.		17613 SANTE FE LINE ROAD WAYNESFIELD OH 45896	07/16/2021	07/16/2026
DOL	DOL		STEVEN DELISA		411 THEODORE FREMND AVE SUITE 206RYE NY 10580	09/03/2025	09/03/2030
DOL	DOL	*****9150	SURGE INC.		8269 21ST STREET BELLEROSE NY 11426	12/22/2022	12/22/2027
DOL	DOL		SYED MUHAMMAD S. JAFRI A/K/A SHARRUKH JAFRI		4307 28TH AVE ASTORIA NY 11103	10/11/2024	10/11/2029
DOL	DOL		SYED RAZA		198 RIDGE AVENUE NY 11581	06/06/2022	06/06/2027
DOL	DOL		TARLOK SINGH		95-27 116TH STREET QUEENS NY 11419	05/28/2024	05/28/2029
DOL	DOL		TARLOK SINGH		95-27 116TH STREET QUEENS NY 11419	07/12/2024	07/12/2029
DOL	DOL	*****4855	TECH INDUSTRIES LLC		20 HEATHER RIDGE ROAD TROY NY 12180	05/20/2025	05/20/2030
DOL	DOL	*****9733	TERSAL CONSTRUCTION SERVICES INC		107 FACTORY AVE P.O BOX 11070SYRACUSE NY 13208	07/16/2021	07/16/2026
DOL	DOL		TERSAL CONTRACTORS, INC.		221 GARDNER RD P.O BOX 14POMPEI NY 13138	07/16/2021	07/16/2026
DOL	DOL		TERSAL DEVELOPMENT CORP.		1935 TEALL AVENUE SYRACUSE NY 13206	07/16/2021	07/16/2026
DOL	DOL	*****2426	THE MATRUKH GROUP, INC.		4307 28TH AVE PO BOX 9082ASTORIA NY 11103	10/11/2024	10/11/2029
DOL	DOL		THOMAS LOBDELL		635 WEST DRYDEN ROAD FREEVILLE NY 13068	01/31/2025	01/31/2030
DOL	DOL		TIMOTHY PERCY		29807 ANDREWS ROAD BLACK RIVER NY 13612	10/17/2023	10/17/2028
DOL	DA	*****1050	TRI STATE CONSTRUCTION OF NY CORP.		50-39 175TH PLACE FRESH MEADOWS NY 11365	03/28/2022	03/28/2027
DOL	DA	*****4106	TRIPLE H CONCRETE CORP		2375 RAYNOR STREET RONKONKOMA NY 11779	08/04/2021	08/04/2026
DOL	DOL	*****8485	TULA PLUMBING AND HEATING LLC		120 SEARS AVE ELMSFORD NY 10523	09/26/2025	09/26/2030
DOL	DOL	*****8210	UPSTATE CONCRETE & MASONRY CONTRACTING CO INC		449 WEST MOMBSHA ROAD MONROE NY 10950	06/06/2022	06/06/2027
DOL	DOL		VINCENT CORRAO		PO BOX 393 NANUET NY 10954	09/17/2024	09/17/2029
DOL	DOL		WILLIAM A BELL		7307 WOODSIDE ROAD VICTOR NY 14564	05/06/2025	05/06/2030
DOL	DOL	*****8266	WILLIAM CHRIS MCCLENDON	MCCLENDON ASPHALT PAVING	1646 FALLS STREET NIAGARA FALLS NY 14303	05/01/2023	05/01/2028
DOL	DOL		WILLIAM CHRIS MCCLENDON		1646 FALLS STREET NIAGARA FALLS NY 14303	05/01/2023	05/01/2028
DOL	DOL		WILLIAM SCRIVENS		4192 SIR ANDREW CIRCLE DOYELSTOWN PA 18902	07/18/2024	07/18/2029
DOL	DOL	*****9494	WND CONSTRUCTION LLC		411 THEODORE FREMD AVENUE SUITE 206RYE NY 10580	09/03/2025	09/03/2030
DOL	DOL		XENOFON EFTHIMIADIS		29-10 38TH AVENUE LONG ISLAND CITY NY 11101	10/11/2023	10/11/2028

NEW YORK STATE OF OPPORTUNITY. Office of General Services

Design and Construction
Division of Construction, 35th Floor, Corning Tower
The Governor Nelson A. Rockefeller Empire State Plaza
Albany, New York 12242
Phone: (518) 474-0331 FAX: (518) 474-8201

SCHEDULE OF SUBMITTALS

PROJECT NO.: 47510-C

FACILITY: DOT STORAGE BUILDING

CONTRACTOR:

PROJECT MANAGER: Gene Bradley

DESIGN CONSULTANT: Architectural Resources

ENGINEER-IN-CHARGE:

LEGEND

PACK: SUBMITTAL PACKAGE

SD: SHOP DRAWINGS

PD: PRODUCT DATA

EPD: ENVIRONMENTAL PRODUCT DECLARATION

SAM: SAMPLES

QCS: QUALITY CONTROL SUBMITTALS

LEED: LEED SUBMITTALS

CCS: CONTRACT CLOSEOUT SUBMITTALS

SUBMITTAL REVIEW RESPONSIBILITY:
F: OGS FIELD OFFICE
F/O: OGS FIELD OFFICE / OFFICE (ALBANY)
D: CONSULTANT / DESIGNER
S: OGS SCHEDULING DEPARTMENT
RSM: Regional Safety Manager

INSTRUCTIONS TO THE CONTRACTOR

1. Refer to **Section 013300 Submittals** of the Project Manual for general requirements regarding submittals and to **Section 017716 - CONTRACT CLOSEOUT** for project closeout submittals.
2. Refer to Sections of the specifications indicated herein for details of the requirements for each submittal listed.
3. Indicate in the rows (spaces) following each item:
a. Critical submittals and long lead items (mark with an 'X'). Some critical submittals may already be identified by the design team. Confirm that these are critical submittals.
b. The date the item will be submitted, and date approval is required (allow at least 3 weeks), and the date delivery of the material or equipment is necessary for completion of the work in accordance with the Progress Schedule. The date entered for the submittal is the last date a substitution will be considered. Proposed substitutions must be made prior to the date entered if more than one substitution is to be submitted for approval. Spaces which contain N/A do not require dates.
4. An example of a Submittal Transmittal (BDC-42) can be located at: http://www.ogs.ny.gov/BU/DC/forms/ContractorConstForms.asp
5. Submit Contract Closeout Submittals (CCS) prior to final inspection.

INSTRUCTIONS TO THE CONSULTANT / DESIGNER

1. Cut and paste required information from each Division (Div.X) tab and place in the S.O.S. tab.
2. Delete Division (Div.X) tabs after the S.O.S. tab has been in-filled.
3. Indicate F, F/O or D in column E. Items in Div.1 have defaults that can be modified as necessary.
4. Indicate items that are critical submittals in column F.
Note:
The following list of submittals is furnished for your convenience in

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SCHEDULE OF SUBMITTALS

PROJECT NO.: 47510-C

	scheduling submittals. The list is not warranted to be complete and does not take precedence over the contract documents. Enter additional submittals, as required and modify this schedule to the specific project. This S.O.S. will be used to populate the submittals website log.

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SCHEDULE OF SUBMITTALS

PROJECT NO.: 47510-C

SUBMITTALS FOR APPROVAL				Send to:	Critical Submittals	Contractor's Projected Dates Allow at least 4 weeks for Approval (allows time for any resubmission)		
Spec Section	Sub Section	Type	Description	F F/O D S	Mark "X" for all that apply	Projected Transmittal Date:	Projected Approval Date:	Projected Delivery Date:
007213			**GENERAL CONDITIONS**					
007213		**PD**	ARTICLE 6: Designate in writing competent supervision and/or management representatives as required - include contact number in case of an emergency after work hours, including weekends and holidays (see 011000 Summary of Work)	F				
007213		**PD**	ARTICLE 8: Permits and licenses	F				
013300			**SUBMITTALS**					
013300		**PD**	Schedule of Submittals Acknowledgement	F	X			
013300		**QCS**	Submittal Coordinator Qualifications	F/O	X			
013113			**PROJECT SCHEDULE**					
013113		**PD**	Prelimanry Project Schedule	F				
013113		**PD**	Baseline Project Schedule	F				
013113		**PD**	Project Schedule Updates	F				
013113		**PD**	Recovery Project Schedule	F				
013113		**PD**	As Built Schedule	F				
013113		**PD**	Time and Impact Analysis	F				
017716			**CONTRACT CLOSEOUT**					
017716		**CCS**	Project Record Documents	F				
017716		**CCS**	Operation and Maintenance	F				
017716		**CCS**	Warranties	F				
017716		**CCS**	Spare Parts and Maintenance Materials	F				
023313			**UNDERGROUND UTILITY LOCATOR SERVICE**					
023313		**QCS**	Submit detailed experience and qualifications description of underground utility locator service	D				
023313		**PACK**	Investigative Report	F				
031000			**CONCRETE FORMING AND ACCESSORIES**					
031000		**PD**	Form Ties	D				
031000		**PD**	Waterstops	D				
031000		**PD**	Form-Release Agent	D				
031000		**SAM**	Waterstops	D				
031000		**SAM**	Form Liners	D				
032000			**CONCRETE REINFORCING**					
032000		**SD**	Placing drawings that comply with ACI SP-066	D				
032000		**SD**	Construction Joint Layout	D				

SCHEDULE OF SUBMITTALS

PROJECT NO.: 47510-C

SUBMITTALS FOR APPROVAL				Send to:	Critical Submittals	Contractor's Projected Dates Allow at least 4 weeks for Approval (allows time for any resubmission)		
Spec Section	Sub Section	Type	Description	F F/O D S	Mark "X" for all that apply	Projected Transmittal Date:	Projected Approval Date:	Projected Delivery Date:
032000		**PD**	Each type of steel reinforcement	D				
032000		**PD**	Bar supports	D				
032000		**EPD**	Environmental Product Declaration	D				
032000		**QCS**	Material Certificates	D				
033000			**CAST-IN-PLACE CONCRETE**					
033000		**PD**	Portland Cement	D				
033000		**PD**	Aggregates	D				
033000		**PD**	Admixtures	D				
033000		**PD**	Fiber reinforcement	D				
033000		**PD**	Vapor retarders	D				
033000		**PD**	Curing materials	D				
033000		**PD**	Joint fillers	D				
033000		**PD**	Mixture Identification	D				
033000		**QCS**	Qualification Data	D				
033000		**QCS**	Material Certificates	D				
033000		**QCS**	Material Test Reports	D				
051200			**STRUCTURAL STEEL FRAMING**					
051200		**SD**	Full detailed drawings of structural-steel components.	D				
051200		**PD**	Structural-Steel Materials	D				
051200		**PD**	High-Strength, Bolt-Nut Washer Assemblies	D				
051200		**PD**	Shear Stud Connectors	D				
051200		**PD**	Anchor Rods	D				
051200		**PD**	Threaded Rods	D				
051200		**PD**	Forged-Steel Hardware	D				
051200		**PD**	Slide Bearings	D				
051200		**PD**	Prefabricated Building Columns	D				
051200		**PD**	Shop Primer	D				
051200		**PD**	Galvanized-Steel Primer	D				
051200		**PD**	Etching Cleaner	D				
051200		**PD**	Galvanized Repair Paint	D				
051200		**PD**	Shrinkage-Resistant Grout	D				
051200		**QCS**	Welding Procedure Specifications (WPSs) and Procedure Qualification Records (PQRs)	D				
051200		**QCS**	Delegated-Design Submittal	D				
051200		**QCS**	Qualification Data	D				
051200		**QCS**	Welding Certificates	D				
051200		**QCS**	Paint Compatibility Certificates	D				
051200		**QCS**	Mill Test Reports for Structural-Steel Materials, including chemical and physical properties.	D				
051200		**QCS**	Product Test Reports - Bolts, nuts, and washers, including mechanical properties and chemical analysis.	D				
051200		**QCS**	Product Test Reports - Direct-tension indicators.	D				
051200		**QCS**	Product Test Reports - Tension-control, high-strength, bolt-nut-washer assemblies.	D				
051200		**QCS**	Product Test Reports - Shear stud connectors.	D				
051200		**QCS**	Survey of Existing Conditions	D				

SCHEDULE OF SUBMITTALS

PROJECT NO.: 47510-C

SUBMITTALS FOR APPROVAL				Send to:	Critical Submittals	Contractor's Projected Dates Allow at least 4 weeks for Approval (allows time for any resubmission)		
Spec Section	Sub Section	Type	Description	F F/O D S	Mark "X" for all that apply	Projected Transmittal Date:	Projected Approval Date:	Projected Delivery Date:
051200		**QCS**	Source Quality-Control Reports	D				
051200		**QCS**	Field Quality-Control Reports	D				
053100			**STEEL DECKING**					
053100		**SD**	Include layout and types of deck panels, anchorage details, reinforcing channels, pans, cut deck openings, special jointing, accessories, and attachments to other construction.	D				
053100		**PD**	Composite Floor Deck	D				
053100		**QCS**	Welding Certificates	D				
053100		**QCS**	Product Certificates: For each ytpe of steel deck	D				
053100		**QCS**	Research Reports: For steel deck, from UNIFORM CODE-ES.	D				
053100		**QCS**	Source Quality-Control Reports	D				
053100		**QCS**	Field Quality-Control Reports	D				
				D				
055000			**METAL FABRICATIONS**					
055000		**SD**	Full detailed drawings of metal fabrications.	D				
055000		**PD**	Nonslip Aggregates and Nonslip-Aggregate Surface Finishes	D				
055000		**PD**	Fasteners	D				
055000		**PD**	Shop Primers	D				
055000		**PD**	Shrinkage-Resisting Grout	D				
055000		**PD**	Prefabricated Building Columns	D				
055000		**PD**	Slotted Channel Framing	D				
055000		**PD**	Manufactured Metal Ladders	D				
055000		**PD**	Ladder Safety Cages	D				
055000		**PD**	Alternating Tread Devices	D				
055000		**PD**	Metal Ships' Ladders and Pipe Crossovers	D				
055000		**PD**	Metal Bollards	D				
055000		**PD**	Pipe Downspout Guards	D				
055000		**PD**	Abrasive Metal Nosings, Treads and Thresholds	D				
055000		**PD**	Metal Downspout Boots	D				
055000		**EPD**	Environmental Product Declaration	D				
055000		**SAM**	For each type and finish of extruded nosing and tread.	D				
055000		**QCS**	Delegated-Design Submittal	D				
055000		**QCS**	Qualification Data	D				
055000		**QCS**	Mill Certificates: Signed by stainless steel manufacturers, certifying that products furnished comply with requirements.	D				
055000		**QCS**	Welding Certificates	D				
055000		**QCS**	Paint Compatibility Certificates: From manufacturers of topcoats applied over shop primers, certifying that shop primers are compatible with topcoats.	D				
055000		**QCS**	Research Reports: For post-installed anchors.	D				
061000			**ROUGH CARPENTRY**					

SCHEDULE OF SUBMITTALS

PROJECT NO.: 47510-C

SUBMITTALS FOR APPROVAL				Send to:	Critical Submittals	Contractor's Projected Dates Allow at least 4 weeks for Approval (allows time for any resubmission)		
Spec Section	Sub Section	Type	Description	F F/O D S	Mark "X" for all that apply	Projected Transmittal Date:	Projected Approval Date:	Projected Delivery Date:
061000		**SD**	Fastener Patterns: Full-size templates for fasteners in exposed framing.	**D**				
061000		**PD**	Plywood Backing Panels	D				
061000		**PD**	Fasteners	D				
061000		**PD**	Metal Framing Anchors	D				
061000		**PD**	Miscellaneous Materials	D				
061000		**QCS**	Evaluation Reports - Metal Framing Anchors	D				
064116			**PLASTIC-LAMINATE-CLAD ARCHITECTURAL CABINETS**					
064116		**SD**	Full detailed drawings of architectural cabinets.	D				
064116		**PD**	Plastic-Laminate-Clad Architectural Cabinets	D				
064116		**PD**	Cabinet Hardware and Accessories	D				
064116		**PD**	Miscellaneous Materials	D				
064116		**SAM**	For each exposed product and for each color and texture specified, in manufacturer's or manufacturer's standard size.	D				
064116		**SAM**	Verification - Plastic Laminate	D				
064116		**SAM**	Verification - Thermostat Decorative Panels					
064116		**SAM**	Verification - Corner Pieces	D				
064116		**SAM**	Verification - Exposed Cabinet Hardwarre and Accessories	D				
064116		**QCS**	Qualification Data: For manufacturer and Installer	D				
064116		**QCS**	Product Certificates - Adhesives	D				
064116		**CCS**	Quality Standard Compliance Certificates	D				
072600			**VAPOR RETARDERS**					
072600		**PD**	Polyethylene Vapor Retarders	D				
072600		**PD**	Vapor-Retarder Tape	D				
072600		**PD**	Adhesive for Vapor Retarders	D				
072600		**PD**	Vapor-Retarder Fasteners	D				
072600		**PD**	Pipe Boots	D				
072600		**SAM**	Vapor Barrier Material	D				
072600		**SAM**	Pressure-Sensitive Tape	D				
072600		**QCS**	Product Test Reports: For each product, for tests performed by a qualified testing agency.	D				
071113			**BITUMINOUS DAMPPROOFING**					
071113		**PD**	Cold-Applied, Emulsified-Asphalt Dampproofing	D				
071113		**PD**	Auxiliary Materials	D				
071113		**PD**	Protection course Panels	D				
079200			**JOINT SEALANTS**					
079200		**PD**	Silicone Joint Sealants	D				
079200		**PD**	Nonstaining Silicone Joint Sealants	D				
079200		**PD**	Urethane Joint Sealants	D				
079200		**PD**	Mildew-Resistant Joint Sealants	D				
079200		**PD**	Polysulfide Joint Sealants	D				
079200		**PD**	Butyl Joint Sealants	D				
079200		**PD**	Latex Joint Sealants	D				

SCHEDULE OF SUBMITTALS

PROJECT NO.: 47510-C

SUBMITTALS FOR APPROVAL				Send to:	Critical Submittals	Contractor's Projected Dates Allow at least 4 weeks for Approval (allows time for any resubmission)		
Spec Section	Sub Section	Type	Description	F F/O D S	Mark "X" for all that apply	Projected Transmittal Date:	Projected Approval Date:	Projected Delivery Date:
079200		**PD**	Flame and Smoke Resistant Intumescent Sealants	D				
079200		**PD**	Pre-Formed Sealant	D				
079200		**SAM**	Sealant	D				
079200		**SAM**	Joint Fillers	D				
079200		**SAM**	Gaskets	D				
079200		**SAM**	Joint Primer/Sealer/Conditions	D				
079200		**SAM**	Backer Rods	D				
079200		**SAM**	Bond Breaker Tape	D				
079200		**SAM**	Initial Selection: Manufacturer's color charts consisting of strips of cured sealants showing the full range of colors available for each product exposed to view.	D				
079200		**SAM**	Verification - For each kind and color of joint sealant required.	D				
079200		**QCS**	Installer's Qualifications Data	D				
079200		**QCS**	Company Field Advisor Data	D				
079200		**QCS**	Joint-Sealant Schedule	D				
079200		**QCS**	Qualification Data: For qualified testing agency	D				
079200		**QCS**	Product Test Reports	D				
079200		**QCS**	Preconstruction Laboratory Test Schedule	D				
079200		**QCS**	Preconstruction Laboratory Test Reports	D				
079200		**QCS**	Preconstruction Field-Adhesion-Test Reports	D				
079200		**QCS**	Field-Adhesion-Test Reports	D				
079200		**QCS**	Sample Warranties	D				
081113			**HOLLOW METAL DOORS AND FRAMES**					
081113		**SD**	Full detailed drawings that indicate exact position of access door units and any special installation conditions.	D				
081113		**PD**	Interior Custom Hollow-Metal Doors and Frames	D				
081113		**PD**	Exterior Custom Hollow-Metal Doors and Frames	D				
081113		**PD**	Frame Anchors	D				
081113		**PD**	Materials	D				
081113		**PD**	Fabrication	D				
081113		**PD**	Product Schedule	D				
081113		**PD**	Oversize Construction Certification	D				
081113		**SAM**	Initial Selection: For hollow-metal doors and frames with factory-applied color finishes.	D				
081113		**SAM**	Verification: Finishes: For each type of exposed finish required, prepared on Samples of not less than 3 by 5 inches.	D				
081113		**QCS**	Field quality control reports	D				
081113		**CCS**	Record Documents	F				
083612			**INSULATED SECTIONAL STEEL OVERHEAD DOORS**					
083612		**SD**	Full detailed drawings for each installation and for components not dimensioned or detailed in manufacturer's product data.	D				
083612		**PD**	Insulated Steel Sectional Door	D				
083612		**PD**	Track	D				

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Spec Section	Sub Section	Type	Description	F F/O D S	Mark "X" for all that apply	Projected Transmittal Date:	Projected Approval Date:	Projected Delivery Date:
083612		**PD**	Removable Center Posts					
083612		**PD**	Weatherseals	D				
083612		**PD**	Windows	D				
083612		**PD**	Hardware	D				
083612		**PD**	Locking Device	D				
083612		**PD**	Manual Door Operator	D				
083612		**PD**	Electric Door Operator	D				
083612		**SAM**	For each exposed product and for each color and texture specified.	D				
083612		**QCS**	Qualification Data: For Installer.	D				
083612		**QCS**	Sample Warranties	D				
083612		**CCS**	Maintenance Data	F				
083612		**CCS**	Manufacturer's Warranty	F				
083612		**CCS**	Finish Warranty	F				
085113			**ALUMINUM WINDOWS**					
085113		**SD**	Full detailed drawings for aluminum windows.	D				
085113		**PD**	Aluminum Windows	D				
085113		**PD**	Accessories	D				
085113		**PD**	Insect Screens	D				
085113		**SAM**	Corner section for each type of window unit and for each color specified.	D				
085113		**SAM**	One full size unit, including insect screen and hardware.	D				
085113		**QCS**	Product Schedule	D				
085113		**QCS**	Qualification Data: For manufacturer and Installer.	D				
085113		**QCS**	Product Test Reports	D				
085113		**QCS**	Field Quality-Control Reports	F				
085113		**QCS**	Sample Warranties	F				
087100			**DOOR HARDWARE**					
087100		**SD**	Full detailed drawings including diagrams for power, signal, and control wiring; and details of interface of electrified door hardware and building safety and security systems.	D				
087100		**SAM**	For each exposed product in each finish specified, in manufacturer's standard size.	D				
087100		**SAM**	Initial Selection: For each type of exposed finish	D				
087100		**SAM**	Verification: For each type of exposed product, in each finish specified.	D				
087100		**PD**	Hinges	D				
087100		**PD**	Concealed Hinges	D				
087100		**PD**	Mechanical Locks And Latches	D				
087100		**PD**	Auxiliary Locks	D				
087100		**QCS**	Door Hardware Schedule	D				
087100		**QCS**	Keying Schedule	D				
087100		**QCS**	Qualification Data	D				
087100		**QCS**	Product Certificates	D				
087100		**QCS**	Product Test Reports	D				
087100		**QCS**	Field quality-control reports.	F				

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087100		**QCS**	Sample Warranty	F				
087100		**CCS**	Maintenance Data	F				
087100		**CCS**	Schedules	F				
089119			**FIXED LOUVERS**					
089119		**SD**	Full detailed drawings for louvers and accessories.	D				
089119		**PD**	Fixed Extruded-Aluminum Louvers	D				
089119		**PD**	Fixed Formed-Metal Louvers	D				
089119		**PD**	Fixed Acoustical Louvers	D				
089119		**PD**	Louver Screens	D				
089119		**PD**	Blank-Off Panels	D				
089119		**SAM**	For each type of metal finish required.	D				
089119		**QCS**	Delegated Design Submittal	D				
089119		**QCS**	Product Test Reports	D				
089119		**QCS**	Windborne-Debris-Impact-Resistance Test Reports	D				
089119		**QCS**	Sample Warranties	D				
092216			**NON-STRUCTURAL METAL FRAMING**					
092116		**PD**	Framing Systems	D				
092116		**PD**	Suspension Systems	D				
092116		**PD**	Auxiliary Materials	D				
092116		**EPD**	Environmental Product Declaration	D				
092116		**SAM**	Steel Framing	D				
092116		**SAM**	Fasteners	D				
092116		**SAM**	Clips and Other Accessories	D				
092116		**QCS**	Product Certificates	D				
092116		**QCS**	Evaluation Reports	D				
092900			**GYPSUM BOARD**					
092900		**PD**	Gypsum Wallboard	D				
092900		**PD**	Water-Resistant Gypsum Backing Board	D				
092900		**PD**	Interior Trim	D				
092900		**PD**	Exterior Trim	D				
092900		**PD**	Aluminum Trim	D				
092900		**PD**	Joint Treatment Materials	D				
092900		**PD**	Laminating Adhesive	D				
092900		**PD**	Sound-Attenuation Blankets	D				
092900		**PD**	Acoustical Sealant	D				
092900		**SAM**	Trim Accessories	D				
092900		**SAM**	Fasteners	D				
092900		**SAM**	Initial Selection: For each type of trim accessory and textured finish indicated.	D				
092900		**SAM**	Verification - Trim Accessories	D				
093013			**CERAMIC TILING**					
093013		**SD**	Full detailed drawings of each type of tile and tile pattern.	D				
093013		**PD**	Tile Products	D				

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093013		**PD**	Tile Backing Panels	D				
093013		**PD**	Waterproof Membrane					
093013		**PD**	Crack Isolation Membrane	D				
093013		**PD**	Setting Materials	D				
093013		**PD**	Grout Materials	D				
093013		**PD**	Miscellaneous Materials	D				
093013		**PD**	Mixing Mortars and Grout	D				
093013		**SAM**	Initial Selection: For tile, grout, and accessories involving color selection.	D				
093013		**SAM**	Verification - Full-size units of each type and composition of tile and for each color and finish required.	D				
093013		**SAM**	Verification - Assembled samples mounted on a rigid panel.	D				
093013		**SAM**	Verification - Full-size units of each type of trim and accessory.	D				
093013		**SAM**	Verification - Metal Edge Strips	D				
093013		**QCS**	Qualification Data: For Installer.	D				
093013		**QCS**	Master Grade Certificates	D				
093013		**QCS**	Product Certificates	D				
093013		**QCS**	Product Test Reports	D				
093013		**QCS**	Maintenance Material Submittals	F				
095123			**ACOUSTICAL TILE CEILINGS**					
095123		**SD**	Coordination Drawings	D				
095123		**PD**	Acoustical Tiles	D				
095123		**PD**	Metal Suspension System	D				
095123		**PD**	Accessories	D				
095123		**PD**	Metal Edge Molding and Trim	D				
095123		**PD**	Acoustical Sealant	D				
095123		**PD**	Miscellaneous Materials	D				
095123		**SAM**	For each exposed product and for each color and texture specified.	D				
095123		**SAM**	Initial Selection: For components with factory-applied finishes.	D				
095123		**SAM**	Verification - Acoustical Tiles	D				
095123		**SAM**	Verification - Concealed Suspension-System Members	D				
095123		**SAM**	Verification - Exposed Moldings and Trim	D				
095123		**SAM**	Verification - Seismic Clips	D				
095123		**SAM**	Verification - Adhesive	D				
095123		**SAM**	Verification - Fasteners	D				
095123		**SAM**	Verification - Wire	D				
095123		**QCS**	Delegated-Design Submittal	D				
095123		**QCS**	Qualification Data: For testing agency.	D				
095123		**QCS**	Product Test Reports	D				
095123		**QCS**	Installer's Qualifications Data	D				
095123		**QCS**	Company Field Advisir Data	D				
095123		**QCS**	Evaluation Reports	D				
095123		**QCS**	Field Quality-Control Reports	D				
095124		**QCS**	Maintenance Material Submittals	F				

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095123		**CCS**	Maintenance Data	F				
096513			**RESILIENT BASE AND ACCESSORIES**					
096513		**PD**	Thermoplastic-Rubber Base	D				
096513		**PD**	Installation Materials	D				
096513		**SAM**	For each exposed product, color and texture specified.	D				
096513		**SAM**	Initial Selection: For each type of product indicated.	D				
096513		**SAM**	Verification - For each type of product indicated and for each color, texture, and pattern required in manufacturer's standard-size Samples.	D				
096513		**QCS**	Product Schedule	D				
096513		**QCS**	Maintenance Material Submittals	F				
096543			**LINOLEUM FLOORING**					
096543		**SD**	Full detailed drawings for each type of linoleum flooring.	D				
096543		**PD**	Linoleum Sheet Flooring	D				
096543		**PD**	Installation Materials	D				
096543		**SAM**	For each exposed product and for each color and pattern specified in manufacturer's standard size.	D				
096543		**SAM**	Initial Selection: For each type of linoleum flooring indicated.	D				
096543		**SAM**	Verification - For each type of linoleum flooring, in manufacturer's standard size.	D				
096543		**SAM**	Heat-Welded Seams	D				
096543		**QCS**	Product Schedule	D				
096543		**QCS**	Qualification Data: For Installer.	D				
096543		**QCS**	Maintenance Material Submittals	F				
096543		**CCS**	Maintenance Data	F				
099123			**INTERIOR PAINTING (MPI STANDARDS)**					
099123		**PD**	Paint Materials	D				
099123		**SAM**	Each Type of Topcoat Product	D				
099123		**SAM**	Initial Selection: For Each Type of Topcoat Product	D				
099123		**SAM**	Verification - For Each Type of Paint System and Each Color and Gloss of Topcoat	D				
099123		**QCS**	Painting Schedule	D				
099123		**QCS**	Contractor's Qualifications	D				
099123		**QCS**	Certification of Volatile Organic Compounds	D				
102800			**TOILET, BATH, AND LAUNDRY ACCESSORIES**					
102800		**PD**	Director's Representative-Furnished Materials	D				
102800		**PD**	Public-Use Washroom Accessories	D				
102800		**PD**	Hand Dryers	D				
102800		**SAM**	For each exposed product and finish specified, full size.	D				
102800		**QCS**	Product Schedule	D				
102800		**QCS**	Sample Warranty	D				

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102800		**CCS**	Maintenance Data	F				
123661.16			**SOLID SURFACING COUNTERTOPS**					
123661.16		**SD**	Full detailed drawings for countertops.	D				
123661.16		**PD**	Countertop Materials	D				
123661.16		**SAM**	Initial Selection: For each type of material exposed to view.	D				
123661.16		**SAM**	Verification - Countertop Material	D				
123661.16		**SAM**	Verification - One full-size solid surface material countertop, with front edge and backsplash.	D				
123661.16		**QCS**	Qualification Data: For fabricator.	D				
123661.16		**CCS**	Maintenance Data	F				
133419			**METAL BUILDING SYSTEMS**					
133419		**SD**	Structural-Framing Drawings	D				
133419		**SD**	Accessory Drawings	D				
133419		**PD**	Structural-Steel Framing	D				
133419		**PD**	Foamed-Insulation-Core Metal Wall Panels	D				
133419		**PD**	Accessories	D				
133419		**SAM**	Initial Selection: For units with factory-applied finishes.	D				
133419		**SAM**	Verification - Panels	D				
133419		**SAM**	Verification - Flashing and Trim	D				
133419		**SAM**	Verification - Vapor-Retarder Facings	D				
133419		**SAM**	Verification - Accessories	D				
133419		**QCS**	Delegated-Design Submittal	D				
133419		**QCS**	Qualification Data: For erector, manufacturer and land surveyor.	D				
133419		**QCS**	Welding Certificates	D				
133419		**QCS**	Letter of Design Certification	D				
133419		**QCS**	Erector Certificates	D				
133419		**QCS**	Material Test Reports	D				
133419		**QCS**	Source Quality-Control Reports	D				
133419		**QCS**	Field Quality-Control Reports	D				
133419		**QCS**	Surveys	D				
133419		**QCS**	Sample Warranties	D				
133419		**CCS**	Maintenance Data	F				
310000			**EARTHWORK**					
310000			Existing Conditions: Submit documentation before earthwork activities begin of existing trees and plantings, adjoining construction, and site improvements that establishes preconstruction conditions that might be misconstrued as damage caused by the Work of this Section.	F				
310000			Qualification Data: For qualified testing agency.	F,D				
310001			**EARTHWORK MATERIALS**					
310001		**PD**	Select Granular Material	D				
310001		**PD**	Subbase Course Type 2	D				

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310001		**PD**	Selected Fill	D				
310001		**PD**	Cushion Material	D				
310001		**PD**	Item B-12	D				
310001		**PD**	No. 1 Coarse Aggregate	D				
310001		**PD**	No. 2 Coarse Aggregate	D				
310001		**PD**	Geotextile - Drainage and Erosion Control	D				
310001		**PD**	Geotextile - Separation for foundation drains, underdrains, undercuts	D				
310001		**PD**	Detectable Warning Tape	D				
310001		**SAM**	Select Granular Material	F				
310001		**SAM**	Subbase Course Type 2	F				
310001		**SAM**	Selected Fill	F				
310001		**SAM**	Cushion Material	F				
310001		**SAM**	Item B-12	F				
310001		**SAM**	Crushed Stone	F				
310001		**QCS**	Qualification Data: For ASTM certified soils testing agency.	D				
310001		**QCS**	Material Test Reports: For each [on-site] [and] [borrow] soil material proposed for fill and backfill.	D				
310001		**QCS**	Source Quality-Control Submittals - Subbase Materials: Provide name and location of source and the NYSDOT Source Number. If the material is not being taken from an approved NYSDOT source, the soil laboratory test results for gradation and soundness tests performed by an ASTM certified soils laboratory will be required.	D				
310001		**QCS**	Source Quality-Control Submittals - Other Aggregates: Provide name and location of source and soil laboratory test results for gradation and soundness tests performed by an ASTM certified soils laboratory.	D				
310001		**QCS**	Supplier's Certificate	D				
312500			**EROSION AND SEDIMENTATION CONTROLS**					
312500		**PD**	Compost Filter Sock	D				
312500		**PD**	Drop Inlet Protection	D				
312500		**PD**	Geotextile Fabric	D				
312500		**PD**	Block, Stone, Aggregate, and Soil Materials	D				
312500		**PD**	Accessories	D				
312500		**QCS**	Trained Contractor Documentation	F				
312500		**QCS**	Mix Design: Submit proposed mix design of each class of concrete	D				
312500		**QCS**	Test Reports: Indicate certified tests results for precast concrete at manufacturing facility, cast-in-place concrete in field, and granular backfill.	D				
312500		**QCS**	Manufacturer's Certificate	D				
312500		**SAM**	Submit two samples or rock, minimum 5 tons each or one-half total project quantity, whichever is smaller.	F				
315000			**EXCAVATION SUPPORT AND PROTECTION**					

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315000		**SD**	For excavation support and protection system. When the proposed excavation exceeds 20' in depth the shop drawings must be prepared by or under the supervision of a New York State licensed Professional Engineer.	D				
315000		**SD**	Delegated-Design Submittal	D				
315000		**PD**	Excavation Support and Protection System	D				
315000		**QCS**	Qualification Data	D				
315000		**QCS**	Contractor Calculations	D				
315000		**QCS**	Existing Conditions Photographs/Recordings	D				
315000		**CCS**	Record Drawings	F				
321216			**ASPHALT PAVING**					
321216		**PD**	Aggregates	D				
321216		**PD**	Asphalt Materials	D				
321216		**PD**	Aphalt Cement Tack Coat	D				
321216		**PD**	Asphalt Designs: Certification, by authorities having jurisdiction, of approval of each asphalt design proposed for the Work.	D				
321216		**PD**	Asphalt Designs: Batch plant name, NYSDOT Plant Number, and location of asphalt plant for each asphalt design proposed for the Work.	D				
321216		**PD**	Asphalt Mix Design Test results that are less than 6 months old for each mix proposed for the Work.	D				
321216		**EPD**	Environmental Product Declaration	D				
321216		**QCS**	Qualification Data	D				
321216		**QCS**	Material Delivery Tickets for Pavement Materials	F				
321216		**QCS**	Field Quality-Control Reports	F				
321723			**PAVEMENT MARKINGS**					
321723		**PD**	Paint	D				
321723		**SAM**	For each exposed product and for each color and texture specified; on rigid backing, 8 inches square.	F				
321723		**QCS**	Certification: Affidavit by the paint applicator, certifying that the materials comply with the current regulatory requirements in effect at the time products were delivered and applied.	D				
330110.58			**DISINFECTION OF WATER UTILITY PIPING SYSTEMS**					
330110.58		**PD**	Disinfection Procedures	D				
330110.58		**PD**	Submit manufacturer information for proposed chemicals and treatment doses.	D				
330110.58		**PD**	Disinfection Chemicals	D				
330110.58		**QCS**	Manufacturer's Certificate	D				
330110.58		**QCS**	Certify that final water complies with disinfectant quality standards of the New York State Department of Health.	D				

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330110.58		**QCS**	Test and Evaluation Reports	D				
330110.58		**QCS**	Field Quality-Control Submittals	F				
330110.58		**QCS**	Qualifications Statements	D				
330110.58		**CCS**	Disinfection Report	F				
331416			**SITE WATER UTILITY DISTRIBUTION PIPING**					
331416		**PD**	Piping	D				
331417		**PD**	Corporation Stop Assemblies	D				
331416		**PD**	Curb Stop Assemblies	D				
331416		**PD**	Accessories	D				
331416		**QCS**	Manufacturer's Certificate	D				
331416		**QCS**	Field Quality-Control Submittals	F				
331416		**QCS**	Qualifications Statements	D				
331416		**CCS**	Project Record Documents	F				
333100			**SANITARY SEWERAGE PIPING**					
333100		**PD**	Sanitary Sewerage Piping	D				
333100		**PD**	Flexible Couplings	D				
333100		**PD**	Flexible Pipe Boots For Manhole Pipe Entrances	D				
333100		**EPD**	Environmental Product Declaration	D				
333100		**QCS**	Manufacturer's Certificate	D				
333100		**QCS**	Source Quality-Control Submittals	D				
333100		**QCS**	Field Quality-Control Submittals	F				
333100		**QCS**	Qualifications Statement	D				
333100		**CCS**	Project Record Documents	F				
333123			**SANITARY SEWERAGE FORCE MAIN PIPING**					
333123		**SD**	Indicate piping piece numbers and locations.	D				
333123		**SD**	Indicate restrained joint locations.	D				
333123		**SD**	Delegated Design Submittals: Shop Drawings with design calculations and assumptions for restrained joints, including establishing lengths of restrained joint piping required. Shop Drawings shall be signed and sealed by a professional engineer licensed in the State of New York.	D				
333123		**PD**	HDPE Pipe	D				
333123		**PD**	Accessories	D				
333123		**QCS**	Manufacturer's Certificate	D				
333123		**QCS**	Field Quality-Control Submittals	F				
333123		**QCS**	Qualifications Statement	D				
333123		**CCS**	Project Record Documents	F				
333216			**PACKAGED WASTEWATER GRINDER PUMP ASSEMBLIES**					
333216		**SD**	Indicate detailed dimensions for materials and equipment, including pump basins, pumps, piping, controls including wiring schematics, and accessories.	D				
333216		**PD**	Centrifugal Grinder Pumps	D				
333216		**PD**	Pump Discharge Piping	D				
333216		**PD**	Pump Basin	D				

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333216		**PD**	Motor	D				
333216		**PD**	Accessories	D				
333216		**QCS**	Manufacturer's Certificate	D				
333216		**QCS**	Field Quality-Control Submittals	F				
333216		**QCS**	Manufacturer Reports	D				
333216		**QCS**	Qualifications Statements	D				
333216		**CCS**	Project Record Documents	F				
334200			**STORMWATER CONVEYANCE**					
334200		**PD**	Corrugated-PE Pipe And Fittings	D				
334200		**PD**	Perforated PE Pipe And Fittings	D				
334200		**PD**	Nonpressure Transition Couplings	D				
334200		**PD**	Cleanouts	D				
334200		**EPD**	Environmental Product Declaration	D				
334200		**QCS**	Field quality-control reports.	F				
347115			**SITE BOLLARDS**					
347115		**PD**	Bollards	D				
347115		**PD**	Nonshrink, Nonmetallic Grout	D				
347115		**PD**	Erosion-Resistant Anchoring Cement	D				
347115		**EPD**	Environmental Product Declaration	D				
347115		**SAM**	For each exposed product and for each color and texture specified.	F				
347115		**SAM**	For units with factory-applied finishes.	F				
347115		**SAM**	Samples for Verification	F				
347115		**CCS**	Maintenance Data	F				

SDVOB UTILIZATION PLAN

☐ **Initial Plan** ☐ **Revised plan** **Contract/Solicitation #** _____

INSTRUCTIONS: This Utilization Plan must contain a detailed description of the supplies and/or services to be provided by each NYS **Certified** Service-Disabled Veteran-Owned Business (SDVOB) under the contract. By submission of this Plan, the Bidder/Contractor commits to making good faith efforts in the utilization of SDVOB subcontractors and suppliers as required by the SDVOB goals contained in the Solicitation/Contract. Making false representations or providing information that shows a lack of good faith as part of, or in conjunction with, the submission of a Utilization Plan is prohibited by law and may result in penalties including, but not limited to, termination of a contract for cause, loss of eligibility to submit future bids, and/or withholding of payments. Firms that do not perform commercially useful functions may not be counted toward SDVOB utilization. Attach additional sheets if necessary.

BIDDER/CONTRACTOR INFORMATION		**SDVOB Goals In Contract**
Bidder/Contractor Name:	NYS Vendor ID:	%
Bidder/Contractor Address (Street, City, State and Zip Code):		
Bidder/Contractor Telephone Number:	Contract Work Location/Region:	
Contract Description/Title:		

CONTRACTOR INFORMATION			
Prepared by (Signature):	Name and Title of Preparer:	Telephone Number:	Date:
Email Address:			

If unable to meet the SDVOB goals set forth in the solicitation/contract, bidder/contractor must submit a request for waiver on the SDVOB Waiver Form.

SDVOB Subcontractor/Supplier Name:		
Please identify the person you contacted:	Federal Identification No.:	Telephone No.:
Address:	Email Address:	
Detailed description of work to be provided by subcontractor/supplier:		
Dollar Value of subcontracts/supplies/services (When $ value cannot be estimated, provide the estimated % of contract work the SDVOB will perform): $_____ or _____%		

SDVOB Subcontractor/Supplier Name:		
Please identify the person you contacted:	Federal Identification No.:	Telephone No.:
Address:	Email Address:	
Detailed Description of work to be provided by subcontractor/supplier:		
Dollar Value of subcontracts/supplies/services (When $ value cannot be estimated, provide the estimated % of contract work the SDVOB will perform): $_____ or _____%		

FOR OGS USE ONLY				
OGS Authorized Signature:		☐ **Accepted**	☐ **Accepted as Noted**	☐ **Notice of Deficiency**
NAME (Please Print):	**SDVOB %/$** ____	____	**Date Received:**	**Date Processed:**
Comments:				

NYS CERTIFIED SDVOB SUBCONTRACTOR/SUPPLIER INFORMATION: The directory of New York State Certified SDVOBs can be viewed at: https://ogs.ny.gov/Veterans/default.asp

Note: All listed Subcontractors/Suppliers will be contacted and verified by OGS.

ADDITIONAL SHEET

Bidder/Contractor Name:	**Contract/Solicitation #**_____

SDVOB Subcontractor/Supplier Name:		
Please identify the person you contacted:	Federal Identification No.:	Telephone No.:
Address:	Email Address:	
Detailed Description of work to be provided by subcontractor/supplier:		
Dollar Value of subcontracts/supplies/services (When $ value cannot be estimated, provide the estimated % of contract work the SDVOB will perform): $_____ or _____%		
SDVOB Subcontractor/Supplier Name:		
Please identify the person you contacted:	Federal Identification No.:	Telephone No.:
Address:	Email Address:	
Detailed Description of work to be provided by subcontractor/supplier:		
Dollar Value of subcontracts/supplies/services (When $ value cannot be estimated, provide the estimated % of contract work the SDVOB will perform): $_____ or _____%		
SDVOB Subcontractor/Supplier Name:		
Please identify the person you contacted:	Federal Identification No.:	Telephone No.:
Address:	Email Address:	
Detailed Description of work to be provided by subcontractor/supplier:		
Dollar Value of subcontracts/supplies/services (When $ value cannot be estimated, provide the estimated % of contract work the SDVOB will perform): $_____ or _____%		
SDVOB Subcontractor/Supplier Name:		
Please identify the person you contacted:	Federal Identification No.:	Telephone No.:
Address:	Email Address:	
Detailed Description of work to be provided by subcontractor/supplier:		
Dollar Value of subcontracts/supplies/services (When $ value cannot be estimated, provide the estimated % of contract work the SDVOB will perform)): $_____ or _____%		
SDVOB Subcontractor/Supplier Name:		
Please identify the person you contacted:	Federal Identification No.:	Telephone No.:
Address:	Email Address:	
Detailed Description of work to be provided by subcontractor/supplier:		
Dollar Value of subcontracts/supplies/services (When $ value cannot be estimated, provide the estimated % of contract work the SDVOB will perform): $_____ or _____%		

NEW YORK STATE OF OPPORTUNITY. | Office of General Services | Division of Service-Disabled Veterans' Business Development

Instructions for Completing the Monthly SDVOB Compliance Report – SDVOB 101

The SDVOB Monthly Reporting Form is to be completed by the Contractor/Vendor, and submitted by the 10th day of *each* month for the duration of the Contract. This form should include **all** (e.g. SDVOB and non SDVOB) Subcontractors and/or Suppliers assigned by the Contractor/Vendor to perform work during the contract. This reporting should also include payments made by your Subcontractors and/or Suppliers to SDVOB firms.

Complete the form as specified below.

Contract No.	Indicate the OGS Contract No.
Contractor/Vendor Name and Address	Provide your firm's name and address.
Federal ID No.	Enter your firm's Federal ID No.
Goals	Indicate SDVOB participation goals.
Reporting Period	Fill in the month and year of reporting period. One copy must be submitted with final payment application.
Description of Project	Briefly describe the work you are providing under the terms of this contract.
Firm Name and Address	Provide the name, address and phone number of **all** Subcontractors/Suppliers assigned by the Contractor/Vendor on this contract or purchase agreement(s).
Federal ID No.	Enter the Subcontractor's/Supplier's Federal ID No. If no Federal ID No. has been assigned, provide only the owner's last four (4) digits of his or her Social Security No.
Payment This Month	Indicate the amount paid *this month* to each Subcontractor/Supplier. If there was no income activity for a Subcontractor/Supplier, please check the box indicating "No Payment This Month."
Contract Amount	Enter the total contract amount or purchase agreement(s) amount for each Subcontractor/Supplier.
Description of Work/Supplies	Briefly describe the work performed or supplies provided by each Subcontractor/Supplier.

Submit to:

Design & Construction SDVOB Compliance Specialist
35th Floor, Corning Tower
Albany, New York 12242
Email: DCSDVOB@ogs.ny.gov

CONTRACTOR'S MONTHLY SDVOB COMPLIANCE REPORT (DUE ON THE 10TH DAY OF EACH MONTH FOR THE PRECEDING MONTH'S ACTIVITY AS EVIDENCE TOWARDS ACHIEVEMENT OF THE SDVOB GOALS ON THE CONTRACT)

Contract No.: _____

Contractor/Vendor Name, Address and Phone No.:	Contractor/Vendor Federal ID No.:	SDVOB Goals	Reporting Period	
	Description of Project:	%	Month	Year

Firm Name, Address and Phone Number (List All Firms)	Description of Work or Supplies Provided	Designation		Payment This Month	Contract Amount
Federal ID No.:		☐ SDVOB ☐ Sub ☐ Broker ☐ Joint Venture ☐ Written Contract	☐ Supplier ☐ Team ☐ Other ☐ No Written Contract	☐ No Payment This Month	
Federal ID No.:		☐ SDVOB ☐ Sub ☐ Broker ☐ Joint Venture ☐ Written Contract	☐ Supplier ☐ Team ☐ Other ☐ No Written Contract	☐ No Payment This Month	
Federal ID No.:		☐ SDVOB ☐ Sub ☐ Broker ☐ Joint Venture ☐ Written Contract	☐ Supplier ☐ Team ☐ Other ☐ No Written Contract	☐ No Payment This Month	
Federal ID No.:		☐ SDVOB ☐ Sub ☐ Broker ☐ Joint Venture ☐ Written Contract	☐ Supplier ☐ Team ☐ Other ☐ No Written Contract	☐ No Payment This Month	

_____ Signature

_____ Print Name and Title

_____ Date

Submission of this form constitutes the Contractor's acknowledgement as to the accuracy of the information contained herein. Failure to submit complete and accurate information may result in a finding of noncompliance, non-responsibility, suspension and/or termination of the Contract.

For OGS Use Only	
Reviewed By:	Date:

APPLICATION FOR WAIVER OF SDVOB PARTICIPATION GOAL

(must be submitted before requesting final payment on the Contract)

Section 1: Basic Information

Contractor's Name:	Federal Identification Number:
Street Address:	E-Mail Address:
City, State, Zip Code:	Telephone: ( ) -

Contract Number:	SDVOB CONTRACT GOALS %

Section 2: Type of SDVOB Waiver Requested

☐ Total	☐ Partial	If partial waiver, please enter the revised SDVOB percentage:	%

Please explain the reason for the waiver request:

Section 3: Supporting Documentation

Provide the following documentation as evidence of your good faith efforts to meet the SDVOB goals set forth in the contract and in support of your waiver application:

- ❑ **Attachment A.** Copies of solicitations to SDVOBs and any responses thereto.
- ❑ **Attachment B.** Explanation of the specific reasons each SDVOB that responded to Bidders/Contractors' solicitation was not selected.
- ❑ **Attachment C.** Dates of any pre-bid, pre-award or other meetings attended by Contractor, if any, scheduled by OGS with certified SDVOBs whom OGS determined were capable of fulfilling the SDVOB goals set forth in the contract.
- ❑ **Attachment D.** Information describing the specific steps undertaken to reasonably structure the contract scope of work for the purpose of subcontracting with, or obtaining supplies from, certified SDVOBs.
- ❑ **Attachment E.** Other information deemed relevant to the request.

Section 4: Signature and Contact Information

By signing and submitting this form, the contractor certifies that a good faith effort has been made to promote SDVOB participation pursuant to the SDVOB requirements set forth under the solicitation or Contract. Failure to submit complete and accurate information may result in a finding of noncompliance, non-responsibility, and a suspension or termination of the contract.

Prepared By: (Signature)	Date:
Name and Title of Preparer (Print or Type)	

For OGS Use Only	
Reviewed By:	Date:
Decision: ☐ Full SDVOB waiver granted ☐ Partial SDVOB waiver granted; revised SDVOB goal: _____ % ☐ SDVOB waiver denied	
Approved By:	Date:
Date Notice of Determination Sent:	
Comments	